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OF

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VOLUME VII.

NEW-YORK:

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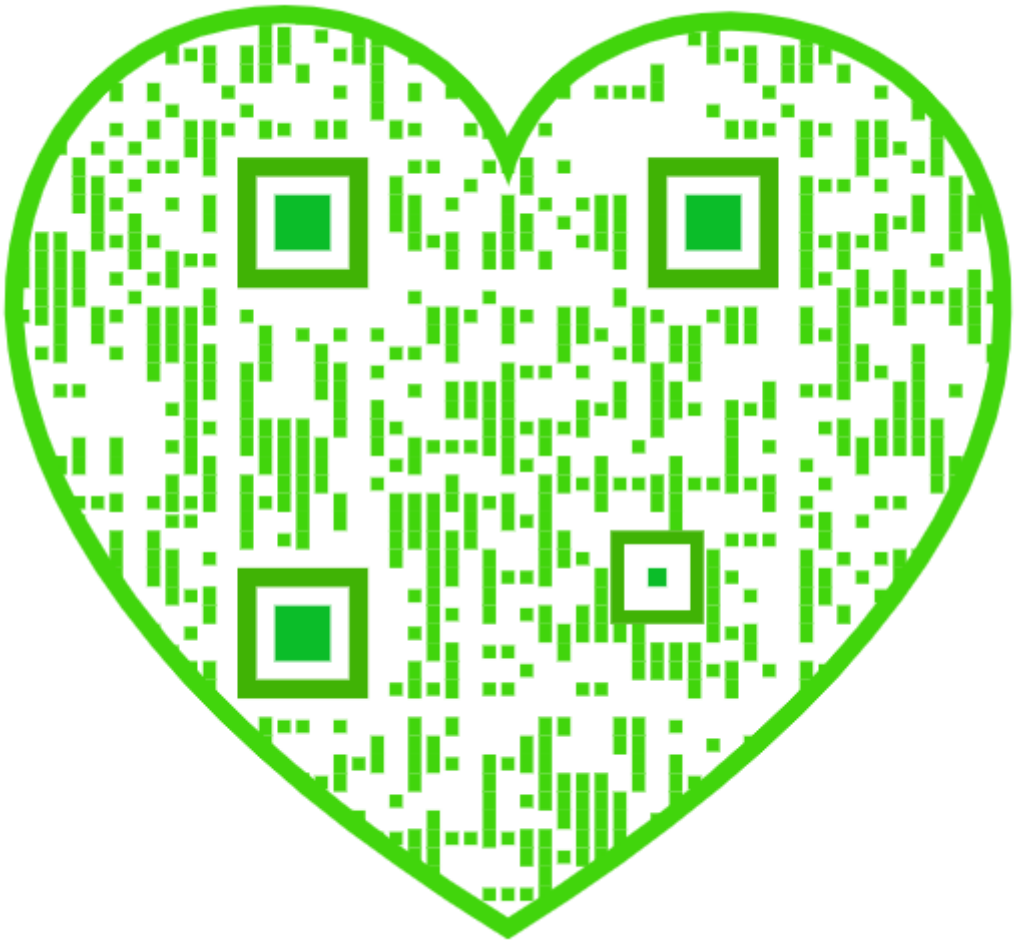

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RAIL-ROAD NEWS.

Lowell Fair---Trial of Locomotives.

The locomotive races to take place at the Lowell Fair which opens this week, Tuesday, are not for the mere purpose of amusement, but have a high and noble object in view, viz., to test the real merits of the engines. For this purpose the Middlesex Mechanics' Association, by their committee of arrangements issued a circular inviting the agents and superintendents of railroads, and manufacturers of locomotives and railroad cars, to exhibit at the fair some of their best locomotive engines.

This part of the exhibition will be open for inspection on Tuesday, the 30th of September, and on Wednesday and Thursday next following, there will be trials of speed on the Boston and Lowell road, near Lowell, and of power and draft on the disused track of the Boston and Maine Railroad, in Wilmington, between the Boston and Lowell and the Boston and Maine Roads. The agent of the Boston and Lowell Railroad has kindly offered to furnish loaded cars for trial of power and draft, and also fuel ready prepared, charged at cost only, the fuel to be of an equal quality, so that, in this respect, no advantage may be had by one locomotive over another.

The New England Association of Railroad Superintendents were invited to nominate three judicious disinterested persons, to be confirmed by the government of the Middlesex Mechanics' Association, to act as judges and report upon this part of the exhibition, on whose award medals and diplomas will be issued and awarded by the Mechanics' Association. This has been done, and Waldo Higginson, L. Tilton, and Wm. P. Parot, were appointed said committee, and all matters are now arranged for a fair trial of locomotives.

The value of such examinations and comparisons, as can be made on the occasion, is too obvious to require comment. The absolute results attained by actual performance on carefully described tracks, and with loads precisely ascertained, cannot fail to be highly interesting and serviceable.

These are the kind of exhibitions we can heartily recommend as they tend greatly to promote improvements and add to our stock of useful knowledge. All those who have the management of this business are men of worth, talent, and possess acquirements of a high order. We hope there will be a strong attendance of railroad engineers.

Perpetual Bearing Raspberry Bush.

Early last spring, says the Providence Post, Mr. Perry B. Philips, of Cranston, saw in the woods a thrifty raspberry bush, which he transplanted to his own garden. The bush put forth blossoms in good time and yielded a handsome crop of Raspberries. Immediately it blossomed again, and two days ago we ate some of the fruit. The berries were large and delicious. What adds to the wonder is, that the bush has blossomed again, and a third crop is nearly half grown.

On last Saturday the thermometer fell 30° in 30 minutes.

THE FIRE ANNIHILATOR.---Fig. 1.

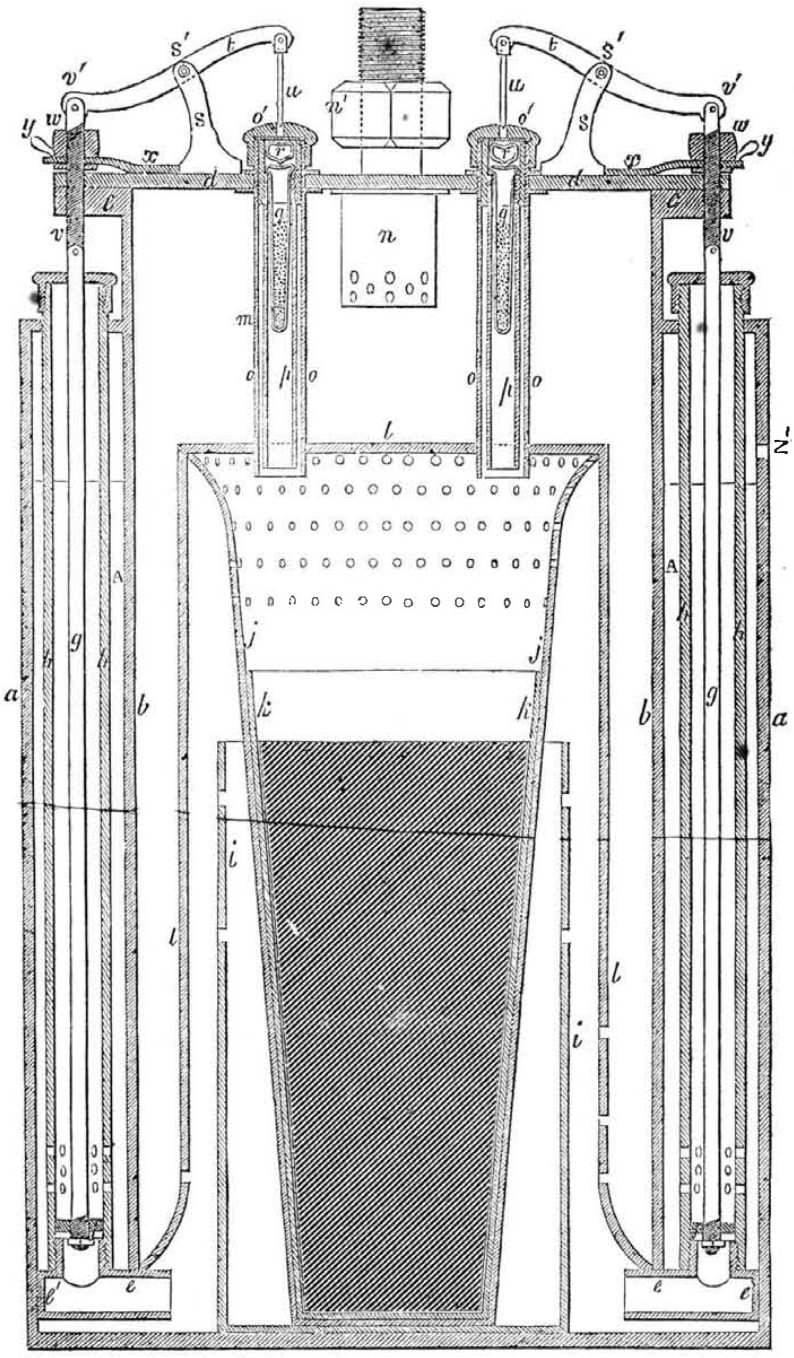
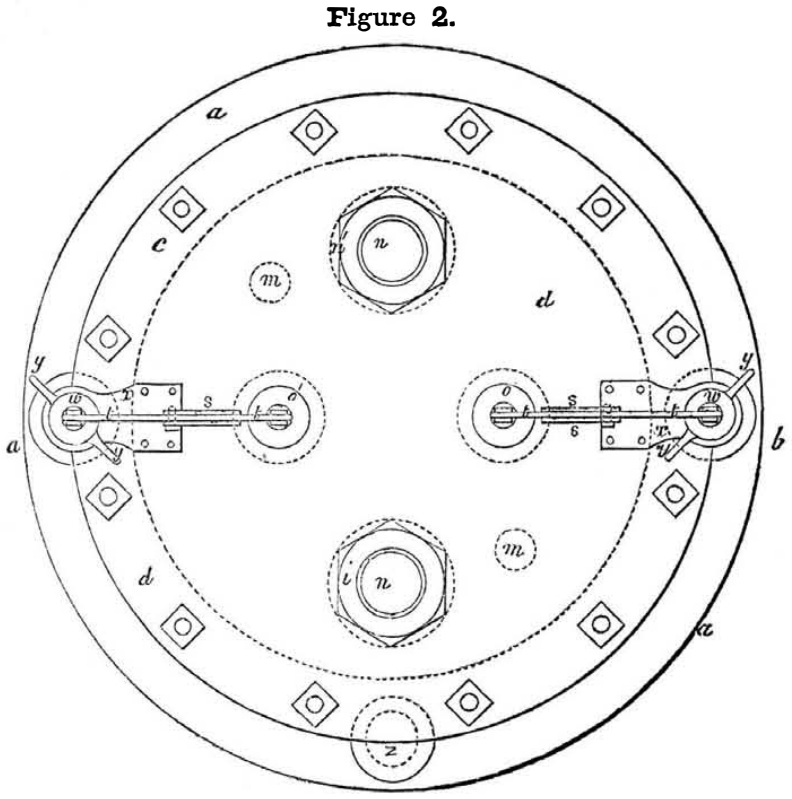


Figure 2.



We hereby present engravings of Philips' Fire Annihilator, which is making so much noise in our country at the present moment. The American patent has been purchased by a very wealthy company—a company having no less personages in it than the Hon. Elisha Whittlesey, of the Treasury, at Washington, for President, and P. T. Barnum, Esq., for general manager.

The nature of the invention consists in generating, in large quantities and with great rapidity, carbonic and other gases, resulting from combustion, and discharging such gases, while intermixed with steam, upon or about any burning mass, and diffusing the same into the atmosphere where fire is burning, for the purpose of subduing and extinguishing it. To do this, the following materials and apparatus are made use of, but the patentee does not confine himself exclusively to the exact described materials. Fifteen pounds of wood charcoal and coke, pounded fine; sixty pounds of good saltpetre, in powder; five pounds of the plaster of Paris, and ten pounds of strong size, mixed together and made into suitable blocks (which can easily be handled), for the use of the apparatus, according to their size. This is the gas evolving compound, and the apparatus to apply them is thus described:—Fig. 1 is a vertical section, and fig. 2 a plan view of a large Annihilator. *a a* is a cylindrical vessel, closed at top and bottom, forming a water chamber, A, about the cylindrical body; *b b c c* is a strong flanch upon which the top plate, *d d*, is secured with wrought-iron bolts and nuts; *e e* are tubes connected together at right angles, forming passages to allow a flow of water from the water chamber, A, to the inside of the cylinder, *b*, the end of these passages at *e'* are closed, and the surfaces of the upper openings are ground flat so as to allow a water-tight joint to be made by the valves and washers, *f*. The valves and washers are secured to the square rods, *g g*, which extend above the top of the water chamber, these rods, *g g*, are for the purpose of raising or depressing the valves. The valves are kept in a centrical position over their seats by guide tubes, *h h*, the lower ends of which tubes are perforated, in order that when the valves, *f*, are raised by the rods, *g*, water may flow from the chamber, A, through the passage, *e*, into the cylinder, *b*; *i* is a cylindrical vessel, open at the top and closed at the bottom and having perforations or holes, as shown in section; *j* is a conically-formed vessel having its larger end open and made of a bell-mouth or spreading form and perforated; *k* is a vessel formed conically, so as to fit within the vessel *j*; this vessel is closed at the bottom and open at the top; *l* is a cylindrical vessel closed at top its lower end being open and of a bell-mouth form and perforated; *m m* are projections attached to the top plate, *d*, for the purpose of preventing the cylindrical vessel, *l*, from being raised by internal pressure; *n n* are outlets or passages through which the gases and vapors pass; the lower parts of these passages are perforated. The union joints, *n'*, are for the purpose of connecting them with branch pipes or hose; *o o* are pipes communicating to within the cylindrical vessel, *b*, they are provided with caps, *o'*, made to screw over the top ends; these caps have each a hole in the centre to allow the free passage of the pin, *u*; *p p* are tubes having caps to screw off and on; these caps have also a hole in the centre to allow the pin, *u*, to pass through. *q q q* are tubes of glass containing a mixture of equal parts by weight powdered chlorate of potass and powdered loaf sugar well mixed together in a dry state; the tubes, *q q*, have rims to allow them to rest on the metal tubes, *p p*; *r r* are bottles hermetically sealed, containing a few drops of sulphuric acid; these glass vessels being enclosed within a metal tube are termed igniters as they are employed to ignite the gas evolving compound contained in

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vessel *k*; *s s* are supports fixed on the top plate carrying levers, *t t*. To the ends of these levers the pins or rods, *u*, are connected by pin joints; *v v* are worms or screw rods jointed to the tops of the rods, *g g*, and also to the end of the levers, *t t*; these screw rods are made to pass through the nuts, *w w*, which have corresponding female screws, through the plates, *x x*, screwed on the top plate, *d*, form collars round the neck of the nuts, *w*, for the purpose of holding them in their proper positions, so that by turning round the nuts, *w*, by means of the arms or levers, *y*, the screw rods, *v v*, are made to ascend or descend, by which which the valve, *f*, may be opened or closed whilst at the same time the pins, *u*, are depressed or raised.

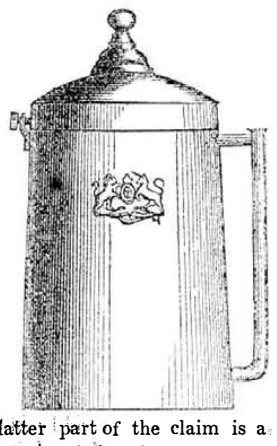
Previous to charging the apparatus, the valve, *f*, should be proved to be in proper condition, and the other parts should be well cleaned and dried: a lining of brown paper and plaster of Paris, about one-eighth inch thick being placed in the vessel, *k*, the gas evolving compound mixture above described is then to be put into its place, in the vessel, *k*.

The vessels, *i*, *j*, *k*, *l*, are then to be placed in the order in which they are shown, the top plate, *d*, with its appendages is then to be fixed on with the bolts and nuts, and the joints made good with plaster of Paris or other such luting.

The rods, *g* and *v*, are to be jointed together by a pin or screw at, *v*, and the valve, *f*, closed, by turning the lever, *y*, attached to the nut, *w*, so as to depress the rods, *g*, and valve, *f*. The valves being closed, water is to be poured into the chamber, A, until it is filled up to the vent hole, *z*,' the vent hole and aperture are then to be closed. The tubes, *p*, containing the explosive materials are then placed within the tubes, *o o*, the caps, *o' o'* are then screwed on, the pins, *u*, are introduced into the holes made to receive them, and the pins or screws, S, are put into their places to form axes, or levers. Strong canvass hose of close texture and double seams may be connected on by the unions, *n'*, for the purpose of directing the gases and vapors evolved upon the burning materials where fire is to be extinguished; a spiral of strong wire should be placed within the hose to insure a free passage for the gases and vapors to be discharged. The apparatus thus charged and prepared for use should be conveyed into the room or chamber where fire is raging or into the immediate vicinity of the fire to be extinguished; the mouth-pieces of the hose are then to be let to as near the burning materials as circumstances will allow, a half turn of each of the levers, *y*, repeated alternately until the worm rods, *v v*, are made to ascend to their full limit, will by opening the valves, *f*, allow water to flow into the cylinder, *b*, while each is alternately made to descend through the the guide holes in the caps, O' O', when the pins are made to pass through the glass bottles containing the sulphuric acid, a drop of which falling upon the potass and sugar instantaneous ignition is caused, when the inflamed mixture bursts the glass that contains it and falling upon the gas evolving compound in vessel, *k*, causes the upper surface to ignite and to commence deflagrating with great rapidity. The gases evolved by the combustion of the materials pass through the holes or perforations on the upper part of the vessel, *j*, in a highly heated state and pressing down the surface of the water about the cylinder, pass through the perforations in the vessel, *l*, and ascending through a quantity of water between *l* and *b*, escape through the passages, *n*, and ultimately through the mouth pieces at the end of the hose. During the passage of the gases through the water between *l* and *b*, their temperature is considerably reduced, whilst that of the water is raised and vapor or steam is rapidly generated and delivered intermixed with the gaseous products set free by the deflagration of the gas evolving material employed. The mixed atmospheres of gases and vapor produced and given off are of that nature that whenever dense clouds of them are thrown upon materials on fire, they immediately extinguish the flame, the red combustion and heat are also reduced and extinguished by the temporary exclusion of atmospheric air and substitution of the humid clouds of gases and vapors evolved as above described. The charge of the gas evolving materials will be very quickly burned out, and if it be considered that the fire is of that extent that a small apparatus will not evolve a sufficient quantity of the above mentioned gases and vapor, two or more apparatus of adequate size may be employed either together or in succession, as it is evident that the power requisite to preserve any quantity of property from the fire must be proportionate to the fire raging at the time.

The claim of the patent is for "the means of subduing or extinguishing fire by generating carbonic acid gas, and other gases resulting from combustion, in apparatus substantially as described, and applying them by the pressure of their generation to the purposes described."

Fig. 3.



The latter part of the claim is a singular one, and means "that the gases are generated rapidly and confined in the emission," so as to have a considerable force in action, like putting on a small nozzle instead of using a butt, still the claim is good as connected with the apparatus, but the carbonic acid gas to extinguish flame and its application to that purpose has long been known, and is amongst the first experiments tried in the chemical elaboratory. It has long been known that when nitric acid is poured on charcoal dust it excites combustion with copious fumes which extinguish flame. So far as the substances used are concerned, Mr. Philips did not discover one single property of them, they are old and well known, but the mode of applying them and combining them so as to heat the water, and generate the steam to act like the blast of a locomotive is certainly new and is his invention.

It would strike us, however, that it is not a very safe instrument to handle—for the chlorate of potash is a dangerous chemical mixture. It has long been known that a little sugar mixed with half its weight of said chlorate, when strong sulphuric acid is poured on it sudden and vehement inflamation ensues, and if sulphuric acid is poured on the chlorate alone, violent decripitation and explosion takes place; it is very powerful however in inflaming a great number of substances, and certainly no better substances could have been chosen to produce carbonic acid gas rapidly. The saltpetre owing to the great quantity of oxygen it contains, is necessary to form carbonic acid gas, with the combustion of the charcoal. The yellow prussiate of potash, sugar, and the chlorate of potass form the celebrated white powder of M. Angendre, which was first introduced to the American public through our columns; it produces an enormous heat.

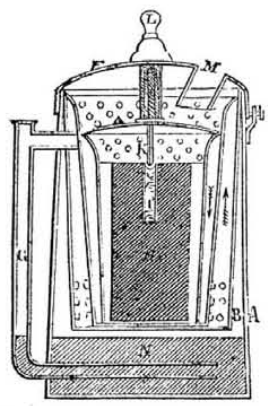
The foregoing description is from the specification as received from the Patent Office. We will now describe one of the smallest size annihilators, the same in every respect as the one exhibited to us by Mr. Barnum a few days since.

Fig. 3 is an outside view, and fig. 4 a vertical section. It consists of two outer iron cases, A and B, with a chamber at the bottom, N, containing water. There are two inner cases perforated in such a manner as to allow the free passage of vapor. In the inner case is placed the charge, H, which generates the vapor. In the centre of the charge is a hole three or four inches deep, in which is placed a glass bottle containing a priming of the charge, I. The igniting pin, K, being pressed down by means of the knob at the top of the machine, L, the glass bottle is broken, and the charge ignited, causing an instantaneous emission of vapor.

The object of Mr. Philips is to extinguish flame by an explosive blast as it were of carbonic acid gas, and it is long since his mind was directed to this subject. In 1844 he obtained his first English patent, but the one described is an improvement which was patented April 16th, 1849.

Mr. Philips in a lecture delivered in Manchester, in the month of October, 1850, stated that he hit upon his invention while witnessing a volcanic eruption in the Mediterranean. The mountain cast forth sometimes flames, sometimes cinders, sometimes vapors and sometimes water. The water he noticed did not extinguish the flame, but the vapor did, and he thought as he watched it, week after week, that the works of nature might be imitated for the saving of property from fire.

Fig. 4.



The invention has been very highly praised by a great number of newspapers, but we do not know whether the editors were first rate judges or not. It may be from our experience as an old fireman, that we consider none of the experiments described as satisfactory to us. It is not kindling some barrels and shavings and blowing their flame out that will do to convince us of its utility. We would like to see it brought to one of our city fires in full sway and a fair (not previously arranged) experiment made with it. This is the way to decide upon its merits. We have been told that an experiment of this kind will soon be made in this city, we hope so, and also hope that it will be successful, but at present we believe it is a very inefficient invention in comparison with our fire engines to arrest the progress of our city fires. We do not know how many of the small machines it would take to extinguish a decent fire, but certainly it appears to us that all the gas generating materials in forty or fifty small ones could not extinguish such fires as we frequently have.

The company formed are now prepared to sell the annihilators; for a small one, figs, 3 and 4, the price is $5, large one, $20. It is recommended that small ones be kept to extinguish chimney fires. It may not be known to our readers, that a small quantity of sulphur thrown upon a fire, as discovered by M. Vaux, will extinguish fire in a chimney. We hope this invention may be more valuable than it appears to us at present, we shall therefore watch its progress and report its effects; if it proves all that some have said about it we shall say so when convinced by ocular demonstration, if not we shall make a note of the matter.

Foreign Correspondence.

London, Aug. 29, 1851.

The whole talk among the Americans now in London is the glorious victory of the "America,"—the yacht, and with it our country—over old England's entire navy of schooners, yachts, and every thing else. It is needless for me to give any elaborate account of the America's doings, as this, at full length, will be found in the London papers, which will reach New York as soon as my letter; suffice it to say that she has beaten, by a long, long distance, everything in the shape of a sailing craft on this side of the Atlantic. Some say it is her hull, others say it is by the cut of her sails. I care not; she has beaten the whole fleet of Royal Dukes, Earls, and what not, and not a single yacht in England dared to take up her challenge for £10,000, and this pays for all the snuffs made at our department of the Exhibition. I am confident that if the officials at Washington had put the whole management of the Department into the hands of our New Yorkers, we would have made a show a thousand times better than we have done, and would have sent many more useful machines also. But I am satisfied—over head-and-ears satisfied, since the America won the Royal Cup, and beat all England in the race with the Titania. The people of England claim to be the greatest nautical people in the world, and a reviewer in the London Mechanics' Magazine has been handling Griffith's work on Naval Architecture with savage ferocity, but he will now have to haul in his jib and close-reef his main sail. Not a man in all England ever thought a Yankee could take the wind out of the sails of their finest craft, but he has done it. I am glad of it on another account—all the members of the yacht clubs are a kind of nabobs—those of the manor born—and think themselves great above all others. Democracy has taken some pride out of them. The Queen visited the America, and I am told was delighted—and so she might.

The great Exhibition is beginning to thin off, and by the end of next month its halls will be silent. Among the American articles here, one has claimed a great deal of attention from the ex-soldiers and seamen with one leg, of which there are a great many in England,—I mean Palmer's Patent Artificial Leg. It is the theme of general conversation, and is universally admired. It has been said that American ingenuity could only *copy* the English or French in anatomical mechanism. But they are shown an American invention which differs in every respect from anything of the kind they have ever seen, and which is so perfect in its action as to enable the wearer of Palmer's artificial leg to walk in such a manner as almost entirely to conceal his misfortune. That the invention does this is demonstrated to the satisfaction of the most incredulous in Dr. Palmer himself; and I must confess that I have seen that gentleman every week at the Crystal Palace during the last four months, and although I noticed that in walking there was a slight appearance of lameness, yet I did not know till recently that he wore an artificial leg. Dr. Palmer has an attentive crowd of listeners round his glass cases every day, and they examine his specimens with deep interest. Some of the most distinguished surgeons of the metropolis have spoken highly of his invention, and strongly recommended it;—among the number are Sir Benjamin Brodie, Prof. Ferguson, and William Lawrence, F. R. S., President of the Royal College of Surgeons.

There are artificial limbs in the Exhibition from about thirty of the most renowned manufactures in the world, but Palmer's artificial leg is acknowledged to be unapproached, either in utility, symmetry of form, or beauty of action and finish. The fact that the jurors have recommended the first class gold medal prize to be awarded to this invention, is the best proof of its value.

I have just been informed that our Hobbs has at last succeeded in opening the famous Bramah Lock, and claims the reward—about $1,000, I believe. Jonathan has been going it during the last week; the best of him comes at last—a capital sign of his wearing qualities.

As the Exhibition will close next month, I hope our Government will order a frigate to carry back the articles in the same manner as they were brought here. The goods will be all packed for shipping by the first of November, and the exhibitors expect that they will be liberally dealt with,—and they deserve to be, for I assure you those who have come here have been at great expense to maintain the honor of our Republic. Excelsior.

Mosquito Bites---A Remedy.

Mr. W. Collinson, of this city, writes us that being much troubled with the bite of the mosquito one evening, and having tried many things as a remedy, the thought struck him to try the melted tallow of a candle by which he was reading (we like to hear of our correspondents reading), when to his astonishment the pain left the part entirely. He believes this to be a good remedy. We hope it is. Mosquitoes are very thick in this city this year. One thing happened with ourself; and, which is not a little singular; no one used to be more troubled and pained with their bites; this year they do not trouble us in the least. They bite and bite, and leave only a small red mark, but that is all, no itching, no trouble afterwards. We cannot account for it.

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Colored Daguerreotypes---Hillotype---Heliochromy.

It has been announced more than once, that Mr. Hill, of Westkill, N. Y., had discovered a simple method of making colored daguerreotypes. It is now stated in the Daguerrean Journal, that one will be exhibited here this month. A great interest has been manifested in the discovery, but hitherto all has been very quiet and secret about the process. It has long been a desideratum with artists to discover such a process. Bequerrel, in France has produced colored pictures, but he was never able to fasten the colors; still many kept working in hopes of discovering this important secret, and before Mr. Hill has seen fit to present the public with any account of his process, M. Niepce St. Victor, nephew of the celebrated discoverer of photography, in France, has made the grand discovery, and showed his pictures to the world. Three of his pictures are now before the public in London, and the new art is called Heliochromy, or sun-coloring. The glory of the discovery will belong to him who first gives it to the world,—a fact not so well appreciated here as in Europe.

The three heliochromes now in London are copies of colored engravings, representing the one a female dancer, the others male figures in fancy costumes; "and every color of the original," says the Athenæum, the editor of which has examined them, "is most faithfully impressed on the prepared silvert ablet." According to the Athenæum's account, which appears to be a hasty one, and is therefore not so precise and minute in the description as could have been wished, "the plate, when prepared, presents evidently a dark brown, or nearly a black surface—and the image is *eaten out* in colors." "We have endeavored, it adds, "by close examination, to ascertain something of the laws producing this most remarkable effect; but it is not easy at present to perceive the relations between the colorific action of light and the associated chemical influence:" The following is the Athenæum's description of the pictures:—

The female figure (it says) has a red silk dress, with purple trimming and white lace. The flesh tints, the red, the purple, and the white are well preserved in the copy. One of the male figures is remarkable for the delicacy of its delineation:—here blue, red, white, and pink are perfectly impressed. The third picture is injured in some parts; but it is, from the number of colors which it contains, the most remarkable of all. Red, blue, yellow, green and white are distinctly marked; and the intensity of the yellow is very striking.

What is said here about yellow is the most interesting, as this color has always be understood to be the one with which Mr. Hill has had most difficulty, and which he never has been able to fix on his plates in any brighter hue than that of buff.

Concerning the relative merit and artistic beauty of these new sun pictures, the Athenæum does not speak very distinctly; and we are left to infer that they are not altogether of the highest grade of excellence. We are told, however, that "these results are superior to those which were given to the world when photography was first announced, and the Athenæum adds that "we may expect shortly to see the heliochromes presenting favorite scenes and chosen friends to us in all the beauty of native color.

We have not seen any printed account in our home exchanges giving anything like an idea of St. Victor's process, but happily we can give a skeleton idea of it, from recent proceeedings of the Paris Academy of Sciences.

It is well known that a plate of silver immersed in a solution of sulphate of copper and the chloride of sodium, and rendered electro magnetic by means of the battery, becomes susceptible of receiving color, when on withdrawal from the solution, it is exposed to the action of light. Becquerel, by exposing this plate to the colored rays of the solar spectrum, obtained an image of the spectrum in such a manner that the red ray produced on the plate an image of a red color, the violet, a violet color, and so with the other rays. The idea struck young St. Victor that there were some relation between the color which a body communicates to a flame, and the color which the light developes on a plate of silver which had been chlorinated, and he therefore commenced a series of experiments to test its correctness. He knew that strontium gave a purple color to alcoholic flame. He therefore prepared a plate of silver by passing it through water saturated with chlorine and the chloride of strontium. He then applied the back of a drawing containing red and other colors against the plate and exposed the whole to the light of the sun for fifteen minutes, when the colors of the picture were produced on the plate, but the red one far better defined than the others; To produce the six other rays of the solar spectrum, the same method used to produce the red color, is followed with other substances. The chloride of calcium for an orange, the chlorides of soda or potassium, or pure chlorine for yellow, and beautiful yellows have been produced by a solution of hydrochloric acid and a salt of copper. The green ray was produced by boric acid and the chloride of nickel, the blue ray was obtained by a double chloride of ammonia and copper, and a white ray with the chloride of strontium and sulphate of copper.

A silver plate prepared with water acidulated with hydrochloric acid and the battery, gives all the colors by the action of light, but the ground of the plate is always black. St Victor found that all the substances which produced colored flames produced colored images by means of light. This is truly an important discovery. Oxygen has nothing to do with the colors, the same results were produced in vacuo; but water was necessary to the process, as dry chlorine produced no effect. The plate to produce these effects upon must be prepared with metallic silver, and that very pure. The baths are made of one fourth by weight of chloride and three fourths of water. After the plate is well polished by tripoli and Ammonia, it is immersed in the bath at one stroke and allowed to remain for some minutes. It is then removed from the bath rinsed in clear water and held over a spirit lamp till the plate becomes a cherry color, at which point it is exposed to the light in the camera. It takes about two hours of exposure, but the process will yet be shortened. It has been exceedingly difficult to fix the proofs, and the process for this has not been made public.

The whole process to be successful must be nicely managed. The idea about the relation between the substances producing colored flame, and colors on the silver plate is a very important addition to the treasury of science.

Sensitive Plate.—M. Fox Talbot, the author of the Talbotype, has discovered a method of making a plate so sensitive that he has been able to obtain an instantaneous picture. He took a piece of paper covered with printed characters and placed it on a rotary disc. Into the camera he put his sensitive plate in a position suitable to receive the image of the paper on the disc, which he placed near a powerful battery. Having closed the blinds of the camera, he turned the disc with a great velocity, then opened the camera and discharged the battery. The discharge spread a bright instantaneous light on the disc, and when the plate was withdrawn, the printed characters the same as those on the revolving wheel were fairly represented the same as if the disc stood still; the process for making the plate so sensitive, has not yet, but soon will be made public.

Spirit of Recent Foreign Inventions.

Collated from our Exchanges—"Newton's Repertory of Arts," "Mechanics' Magazine," "Patent Journal," &c London; "Le Genie Industriel," "L'Invention," "La Lumiere," &c., Paris.

Incandescent Fire in an Ordinary Fire-place.—Geo. H. Bachoffner and N. Defries, of London, have recently patented methods of producing bright incandescent fire, in imitation of an ordinary fire-place, as follows. A grate like the common grate is employed, the bottom bars being tubes with small holes in them for the admission of the gas as commonly employed in the combustion for heating; or, instead of this, the common bars are employed, but are covered with wire-gauze or platinum foil, or perforated talc or iron balls. Beneath this three or more rings of gas jets are allowed to discharge and pass through the wire-gauze, on the top of which are placed shreds of spongy platina; or, instead of platina, the following composition is used, 152 parts bichromate of potash, 125 parts sulphate of copper, 39 parts of carbonate of ammonia. These are dissolved separately in water and then mixed together; a precipitate is then thrown down, which is washed and dried, and then submitted to a red heat in a crucible, after which it can be used as a substitute for the spongy platina. The gas being admitted as stated, plays above the platina or the described composition, when it is ignited, and the whole mass assumes a bright incandescent appearance, giving out a great amount of heat, and resembling a clear coal fire.

Coating Iron with Zinc.—Mr. H. Grissel, and Mr. T. Redwood, Professor of chemistry, in London, have recently taken out patents for the following method of coating iron with zinc, which is worthy of attention:—the zinc is melted in an iron pot, and on its surface is placed a layer of the chloride of zinc, or a mixture of the dry sulphate of zinc and the chloride of sodium. (The chloride of zinc is made by dissolving clean pieces of zinc in muriatic acid—old spirit of salt.) When the zinc and salt are in a state of fusion in the iron pot, the iron, which has been well cleaned from all dirt and oxide, is dipped in through the covering of the fused salt, when the iron soon becomes coated with the zinc. When taken out, if is found that a sufficient quantity of zinc has not adhered to the iron, a small quantity of salammoniac, in powder, is sprinkled over the iron, which is again dipped into the molten zinc. It is advantageous to dip in the iron several times.

To coat iron with tin.—Proceed as above directed, only use equal quantities of chloride of zinc and sal ammoniac, on the top of the tin.

To Coat Iron with Silver.—Prepare the iron by cleaning it well, then make up the following mixture; 12 parts by weight mercury, 1 of zinc, 2 of the sulphate of iron, 2 of muriatic acid, and 12 of water; heat the mixture to 200° Fah., and place the iron in it—rubbing the mercury with a pad on the iron. After the iron is covered with this amalgam, silver is melted in a crucible and the iron is dipped into it. The silver may be alloyed.

Coating Iron with Copper or Brass.—The iron is well cleaned and the copper or brass, is melted in a proper vessel or crucible on the surface of it there is placed a layer of a mixture composed of 112 parts by weight of red oxide of lead, 24 of boracic acid, and 16 of clean white sand. When the metal and this compound salt are in a state of fusion, the iron is dipped in and allowed to remain long enough to obtain a good coating.

Cast Iron Pavements.—Mr. Thomas Allen, of Glasgow, Scotland, has recently secured a patent for the following method of covering streets or roads:—Blocks of iron are cast about 18 inches square, having their upper surface grooved for the purpose of affording a good foothold for horses. The road is previously prepared by laying a good foundation of concrete upon which the iron blocks are laid in such a way that the edges afford mutual support to one another throughout the whole surface of the paving. Some of the blocks have lower projecting flanges, upon which are supported upper projecting flanges upon the next plates—thereby binding and supporting the whole together. The gutters in the sides of the road are also formed of cast iron. The surface is so rounded as to shed off the water quickly. Instead of solid cast-iron blocks, Mr. Allen sometimes uses cast-iron boxes.

Ventilating Boots and Shoes.—A patent has recently been secured by C. Marsden, of London, for making boots and shoes with the soles ventilated. There are two hollow channels formed in the under-side of the inner soles, running nearly from heel to toe: holes are bored in the soles, and small tubes run up through the vamp, and for boots up the leg. The walking makes the boots and shoes act like bellows:—good for warm weather. Some of our Yankee shoemakers will, no doubt, improve on this in some way—the idea is a good one.

Iron Ore and Stone Pavements.—M. Henry F. Marie De Pons, of Paris, has received a patent for making the surfaces of roads and streets with a concrete of stone, iron ore reduced to small pieces, and broken cast-iron in chips, mixed with hydraulic cement, and then laid on the road and rolled in. The road must first be made smooth, and, while the cement and iron material is being rolled in, alum water is sprinkled over it.

New Motive Power and the Spiritual Rappings.

S. P. Andrews, editor of the Static Pressure Engine, we perceive is agent of the "Spiritual Rappings Association" formed in this city. We anticipate, one of these days, a new revelation from the world of Rapping Spirits, which will rap the new motive power into the dark ages, as something too far behind this age of the Spiritual Rappers in respect to the true light, (but spiritual pungency in respect to noise and centrifugal nonsence.) The new power to be revealed will be some force coming from nowhere and costing nothing, yet increasing according to the cube of velocity. The centrifugal force costs nothing and increases according to the square of the velocity, but there is no reason to suppose that the cube force is less an independent law of nature.

We perceive that Mr. Sawyer is sawing away in a lot of the most *see-saw* articles that ever were publisned; they will, no doubt, tend to add to the weighty reputation of our leaden headed cotemporary. He fumes, fabricates, and finishes in foam. Oh, once sensible and worthy friend, Ichabod, Ichabod, is written on thy forehead.

Relic of the Revolution.

Jordan L. Mott, Esq., of Mott Haven, recently sent to the Smithsonian Institution a blunderbuss, taken out of the British frigate Hussar, which was sunk in the East River above Hurlgate, in November, 1780. The piece has therefore lain in the water for seventy years. The barrel lock and screws, all the iron work of the gun, are entirely destroyed, yet the brass is in a most perfect state of preservation. Professor Henry in acknowledging the receipt of the relic, observes that it is not only interesting on account of the historical associations connected with it, but also as exhibiting the unequal action of salt water on two metals simultaneously exposed to corrosion. It is probable that the brass has been protected at the expense of the iron. The two metals and the water with which they come in contact would form a galvanic combination in which the chemical action would be determined on the more oxidizable matter.

Perforation of a leaden Water Cistern by Insects.

At a recent meeting of the London Chemical Society, an account was given by J. H. Gilbert, of the depredations of an insect belonging to the order Coleopera and genus Anabianca, on a water-cistern that had been constructed of worm-eaten wood lined with lead. In a little more than three years the cistern proved to be leaky, and a number of small perforations were found in the metal lining, which on careful examination were ascertained to have been produced by the above named insect. Other instances were referred to in which similar effects have been observed.

They have appointed a gentleman in the city of Glasgow, Scotland, to a new and rather singular office, viz., "Smoke Inspector." It is not the same kind of office as that in our sister city, Boston, to stop the pipe and cigar smokers in the streets, but to prevent chimneys from smoking under a penalty; the world is improving.

The Partition Tumbler.

Mr. W. McFarlane, of this city, writes us that he has seen and made partition tumblers in Scotland many years ago. He refers to the tumblers spoken of so much of late in the old country papers, and the Scientific American of the 2nd ult.

Benefit to Horses.

A valued subscriber writes to us that, according to his experience, black walnut and sumac leaves juice, put upon a horse, will prevent flies from annoying him.

Next week we shall present a beautiful engraving of Beardslee's Planing machine, drawn by our artist from a machine now in operation in the city of Albany.

An industrial exhibition is to be held in Sydney, Australia, next month, (October.)

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B. W. Brinkerhoff.

NEW INVENTIONS.

Improved Clothes Wringer.

Mr. Isaac Stratton, of West Swanzey, Cheshire Co., N. H., has taken measures to secure a patent for an improvement in machines for wringing clothes, consisting of a box having a false bottom perforated with holes, and its sides made of cylindrical slats placed vertically at some distance apart, with spaces between them. There is a spout below the false bottom to carry off the expressed water. The clothes are put in the box, and a plunger like that of a screw platten in the cheese press forces down the clothes and drives out the water. There is no fear of injuring the clothes by this press.

What has become of Mr. Ira Avery's excellent wringer? We have heard nothing about it for a long time.

Machine for Making Blinds.

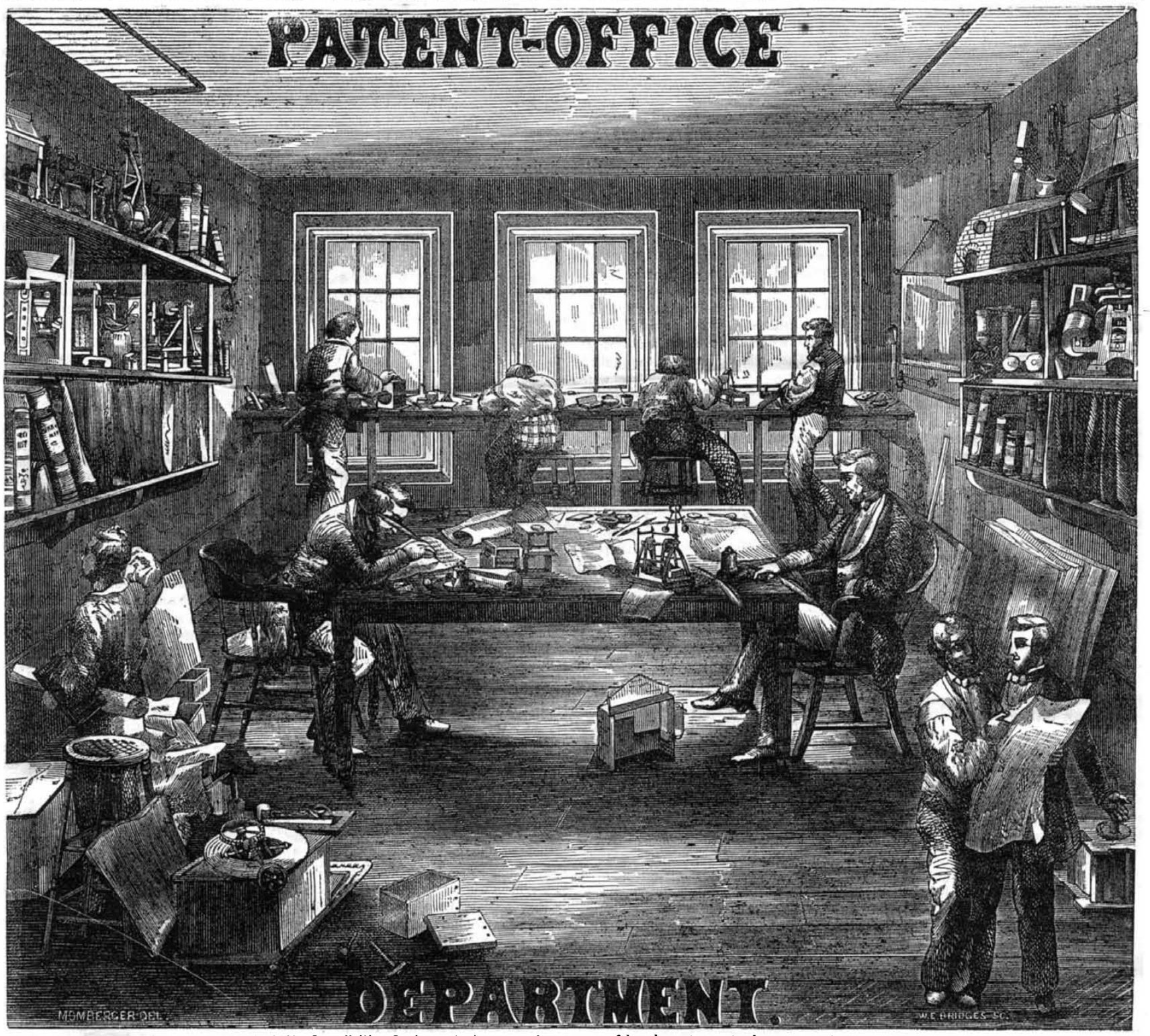
Mr. Daniel H. Thompson, of Springfield, Mass., has taken measures to secure a good improvement in machinery for manufacturing blinds for windows, &c., whereby the different operations required upon the several parts composing the blind are conducted at the same time. This is done by platforms, the motion being communicated to them by cranks which operate the boring bits, the cutters for forming the tennons, the points for pricking wire holes, all of which are done so systematically, that we may expect a considerable reduction in the price of blinds by this invention; it is a useful improvement.

Improvement in Making Iron Pipes.

Mr. Jonathan Ostrander, of the city of Troy, N. Y. has taken measures to secure a patent for an improved mode of manufacturing wrought iron pipe, by employing a mandril which passes through the furnace, which takes up the the sheets or plates of metal, after they are properly heated and passes them between the necessary rollers and dies used for welding the pipe, the said rollers or dies being enclosed in a suitable tight box placed at one end of the furnace. By this arrangement, the air is prevented from coming in contact with the iron during the welding operation, and the sheets or plates are not cooled by withdrawing them from the furnace before welding as is now the practice.

Godfrey's Crystal Bee Palace.

Messrs. Stafford Godfrey, and Ambrose F. Moon, of Antwerp, Van Buren Co., Michigan, have taken measures to secure a patent for a new bee hive which has received the above title. The boxes are secured together by the slides employed in the intercommunication and a self-acting door makes it exceedingly convenient for the apiarist.



The above is an accurate view of the Patent Department connected with the Office of the Scientific American; it represents the several draughtsmen and specification writers employed in making out the drawings and papers for the patents of all nations. A large amount of foreign business is transacted with every government where patent rights are recognized, and papers are made out in the French, German, and other foreign languages. Having agents in the chief cities of Europe, our facilities for soliciting foreign patents are perhaps unequalled by any office in America. Our principal business, and by far the largest part, however, is the application for American patents. This business we commenced some years ago, at the urgent request of many men, who, incapable themselves of making correct drawings and good specifications, desired us to do so, knowing they could put confidence in our efforts to do business for them faithfully and zealously. Our efforts have been very successful, and we transact a large amount of business. Our draughtsmen are practical mechanics, and can make as well as draw machinery, they having served regular apprenticeships; this is an advantage which many patent agencies do not possess. The department represented is a private one, and no person is admitted to examine the models until applications are completed. We endeavor to be prompt and faithful in transacting business, and in giving advice we endeavor to be candid and fair; saying to every one, "you cannot get a patent," when we believe he cannot.

We prepare drawings of every character and of every description; and no office can make them more correct. The character of our office for good drawings is not excelled, if equalled. To those who favor us with business, our fees are moderate, and our interest in the claims of our clients has always met with commendation, and it is our duty to labor in such a manner as never to forfeit the confidence of inventors.

To Our Cotemporaries.

A copy of the present number of the Scientific American is forwarded to every newspaper publisher in the United States for their perusal, antecedent to the commencement of Vol. VII. Our cotemporaries have hitherto spoken in high and courteous terms of our efforts, and we shall rejoice to know that we have not forfeited their kind wishes for the future

The field occupied by us, is one that in no way interferes with any other publication in the country—and while aiming to extend the benefits of mechanical ingenuity—we feel encouraged to still further exertions by the continued smiles of the community and our brethren of the press. We have never pursued an indiscriminate system of exchange, it being impossible for us to do so without experiencing a heavy draft upon our pecuniary condition. This is readily perceived from the fact that in the peculiar field to which our efforts are mainly directed, we are continually culling from the great book of nature the mysteries of science and philosophy—thus rendering the Scientific American a valuable acquisition to every publisher's exchange list. We can only say, that to those who choose to insert the Prospectus found on the last page, twice in their journals, they will be entitled to the Scientific American throughout the volume, without an exchange.

We shall esteem it a favor to be informed of any omission on our part in sending the paper, and we request all publishers who insert the Prospectus to send a copy, marked, to this office. Our cotemporaries generally file the Sci. Am., as the most of the matter contained in its columns is of a useful nature—standard information.

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Scientific American

NEW-YORK, SEPTEMBER 20, 1851.

Our New Volume.

After what we said last week in concluding volume six, we have but little more to say this week. We believe that although we have a very respectable circulation now, it is not one half such a circulation as we should have. Our population is over twenty millions, and we are confident that there are tens of thousands who are not acquainted with the Scientific American. Every influence which our friends employ to spread abroad a knowledge of the character of our paper, helps to extend its circulation, and we are grateful to our friends when they do so. It is not so large a paper as some others, but it is far more expensive to sustain, and the value of nothing should be estimated by its size, for size and quality are different things. It is our intention to expend much more upon the *Scientific American* this year, than we have ever done before. We have promised at the commencement of every new volume, to improve with an increase of circulation, and for an evidence of the fulfilment of our promise a comparison of our issued volumes will fully satisfy every person. Our attention will be directed in obtaining the latest patent news about law suits, &c. We shall, as heretofore, present the latest accounts of useful inventions and discoveries in all parts of the world, and be particular in reviewing things new and old. We shall present an illustrated history of steam boilers on our last page, and give suitable directions about furnaces &c. Well-sinking and boring will also be illustrated in this volume, in short it will be by far the best illustrated scientific paper ever published, it will have no rival in any respect for its amount of useful information relating to the arts, chemistry, &c. We sometimes publish receipts, which are worth more than the whole price of subscription Every mechanic, farmer, yea, every body, will find something profitable and interesting in it.

Patent Office Report for 1850.---No. 1.

This report which was presented to Congress on the 1st day of January, Anno Domino, 1851, has in the incredible short space of eight revolving moons at last emerged from the printing establishment of the House of Representatives. What a panegyric upon the go-ahead character of our people. Our New Yorkers are beating all the world in swift sailing steamships and clipper yachts, but in Washington the qualities which seem to command the greatest patronage are slowness and scheming. It is to be regretted that such an important document as this should have been kept back so long from the public, or else it should have tarried a little longer at Jerico, say four months, and then it would have made an exact year in travelling from the Patent Office "out and back again."

During 1850, no less than 2,193 applications were made for patents, and 602 caveats were filed. No less than 1,038 applications were rejected, the greatest number in one year on record.

The receipts of the office were $86,927,05; the expenses $80,100,95, balance in favor of the patent fund of $6,826,10. Considering the amount of labor performed in the Patent Office, it is a most expensively managed Institution, and is worse now than ever. There is only $15,331,27 now in the patent fund. Things will not go right until all this is eaten up in some way, for it requires all this and some more now to meet the appropriations made out of it. The salaries paid out of the fund amount to $29,260,94, and for the payment of temporary clerks $13,361,67; contingent expenses, (we should like to see the items) $13,430,19, for agricultural statistics, $3,859,35, and $500 for the analysis of bread stuffs. It is our opinion that at least $10,000 has been paid out of the patent fund for illegitimate business and things.

We had hoped to see a great reform in the Patent Office—there will come one some day. The hard earned money of our inventors is squandered in a useless manner to them. No less than $10,315 was paid into the Treasury as permanent funds by the rejected applicants. This sum paid all the salaries of the chief examiners, and $315 over; this we would not care so much about, but we are confident that many of those rejections were unfair, and many unfair rejections are now made, and we can prove it by the most respectable testimony. $20,000 pays the salaries of the commissioner, the chief and assistant examiners, consequently for the salary of the machinist, the clerks, porters and temporary clerks, the sum of $22,891,12 has been paid. We do not find fault for good and fair pay for *legitimate* business, but we think that the agricultural statistics and the analysis of bread stuffs, which cost $4,359, have no legal claims upon the moneys paid into the Office by inventors. There are other things which we might speak about here, but we believe it will do more good to bide our time a little longer.

The business of the Patent Office has trebled within the last ten years, and Commissioner Ewbank asks for "two other Chief and two Assistant Examiners to meet the demands of the office, and the business is now two months behind hand." Their salaries will amount to $8,000, but we heartily go in for keeping up the business of the Office square to the mark, and the Commissioner is right in requesting this extra force, before the business falls so far behind as it was previously.

There is one most excellent feature about this report, that is the published accounts of inventions made in the provinces and the patents granted before the Federal Organization, Mr. Ewbank is peculiarly qualified for a work of this kind, and he deserves praise for it. We shall notice some of these according to future opportunities, and we shall take up the reports of the Examiners in rotation as we did last year.

Interesting Patent Case.

U. S. Circuit Court, before Judges Grier and Kane, Philadelphia.

Philadelphia is the patent battle ground of the United States. More patents are tried in Philadelphia than in any other city in our country.

On the 11th September, the court in the person of Judge Kane, gave its decision in reference to Battin's Coal Breaker, which was illustrated in Vol. 6. Scientific American.—The case was :—

"Joseph and Samuel Battin vs. Taggart, Radcliff and Johnson and others. The plaintiffs were owners of the well known machine for breaking coal. The facts stated were, that in 1843, Joseph Battin took out a patent for a machine for breaking and screening coal, simultaneously, in which his claim was for the manner in which he had arranged and combined the breaking and sifting apparatus with each other, He brought suit against Clayton & McGinnis, on this patent. The court decided that the patent was for a combination and not for the breaking rollers alone, which the plaintiffs' council contended was the true construction of the claim. The patentee then surrendered the original patent in 1849, and then took out a reissued patent for the breaking rollers alone. Upon that patent suits were brought against the above defendants, who are coal operators in Schuylkill county, and verdicts were recovered by the patentee for $800 in each case. The plaintiffs then moved to treble the damages, and the defendants moved for new trials.—These motions were argued three or four months ago, by John Cadwaladder, George M. Dallas, and William A. Porter, Esqs., for the plaintiffs, and Garrick Mallery and Furman Sheppard, Esqs., for the defendants.

The opinion of the court was delivered by Judge Kane, in which he ruled in favor of the defendants, upon the ground, 1st. That a description by an applicant for a patent of a machine or part of a machine, in his specification, unaccompanied by notice that he has rights in it as an inventor, or that he desires to secure title to it as a patentee, is a dedication of it to the public.

2d. That such a dedication cannot be revoked, after the machine has passed into public use, either by surrender and re-issue or otherwise.

M. Battin has described his rollers in the patent of 1843, but did not claim them as his invention, and the law of the re-issues does not allow him any title to the rollers now, for that would be to expand the claim, and cover, by the re-issued patent, an invention different from that described in the original patent. The court said that Mr. Battins' invention as he now defines it, was in use for nearly six years before he claimed that it was his property. He had made it known as an unprotected element of the combination patented in 1843. He cannot reclaim what he has thus given to the public.

New trials were granted in each of the cases, but it will be seen that the opinion of the court, on the question of law, is fatal to the patentee's title," as much as to say he has no valid patent. It appears indeed strange that such a decision should be made, for it looks as if Judges sometimes give contradictory decisions. Judges Grier and Kane have been the strong friends of the Woodworth patent, and yet a decision like the above certainly makes it null also. William Woodworth's first claim in 1828 was not for a combination of pressure rollers and cutters, but the application of cutter or planing wheels to plane boards &c. Seventeen years after this, when Woodworth was laid in the grave, his son obtained an amended patent, claiming "the combination of the rotating planes with the pressure rollers, &c.

If Battin made the mistake and gave his rollers to the public for six years, and on that account rendered his patent void, how is it that another patent is supported by the same court after its owners make a like mistake and not only saw the invention now claimed by Woodworth to be used for six years, but nearly three times. To us it appears these cases are parallel, and if justice is done to one let it be even-handed to another patentee. If both patents are void in law owing to the mismanagement of the owners, then why does the same court sustain the one and slay the other?

An Improvement Wanted for Ginning Sea Island Cotton.

We wish to direct the attention of our readers to a very important subject—one to which our attention was directed by the Hon. John F. H. Claiborne, of the New Orleans Courier,—and we cannot do better than by quoting his letter to us on the subject, dated 29th August last :—

"I have recently purchased a large plantation, about forty miles from here, where the staple Sea Island cotton is cultivated. Owing to the delicacy of the staple, the saw gin is excluded, the seeds being separated from the lint by a set of wooden rollers, which wear out very fast, and the whole process is so exceedingly slow that, though we finish picking by the first of January, it is about May or June before the crop can be brought to market. The machine is rough and clumsy, and is the same which has been used in Carolina for many years. It strikes me that some improvement must have been made in these as well as in other gins and machinery of all kinds—something that will separate the wool from the seed more rapidly and without injuring the staple. For the sake of expedition, I would be willing to submit to some injury of the staple. The cotton in this place, this spring, brought 32 1-2 cents all round, but the process of ginning is so slow, and so much labor has been monopolized, which otherwise might have been directed to farm improvement, that I doubt if the proprietors realized much, after all. This is my first year, and I have come to the conclusion that unless I can find improved machinery, I will abandon the culture of the Sea Island, although my lands are most admirably adapted for it.

Yours, respectfully, J. F. H. Claiborne."

Knowing that a patent had been taken out for improvements in machinery for ginning the Sea Island Cotton, we directed a letter to a quarter where we were sure of receiving positive information on the subject—this was to those celebrated Gin manufacturers, Messrs. Bates, Hyde & Co., of the Eagle Cotton Gin Manufactory, Bridgewater, Mass. The following is the answer :

"Gents.—There are no Roller Cotton Gins manufactured in this town. Mr. Carver's Patent Roller Gin never succeeded as a practical machine, and has been abandoned, and we know of no Roller Gin that we can recommend. We have frequent orders for them, and have several now on hand not filled, one of them received by this morning's mail. A recent improvement made by us in the grate to the Saw Gin, has made it much more suitable for ginning the Sea Island Cotton, and as soon as we can obtain a quantity of the Sea Island Cotton in the seed we shall make the experiment, and if we think it will answer the purpose intended, shall inform you.

The best Roller Gin ever seen by us was invented by Mr. John Beath, and made at Braintree, in this State, but it met with poor success at the South, and the manufacture of them was abandoned: we sold two of these last season, one of them was shipped to Bombay.

We intend to make a Roller Gin some time the present season, similar to Beath's, but much simplified and improved; should we succeed according to our expectations, we shall inform you. Respectfully, Bates, Hyde & Co."

It is very evident, from the foregoing letters, that a great improvement is demanded in machinery for ginning the long Sea Island staple. We have no doubt but it will be made, and that at no great distance of time from the present. We are obliged to Mr. Claiborne for thus bringing the subject before the inventors of our country; and while it is thus presented, we have to say that a first rate machine will meet with a handsome patronage from our planters. In saying this much, however, let us caution every inventor against any conclusion but "a machine that can do the work well;" and the only way to prove this is by practical use for some time.

Sale of the Yacht America.

After the celebrated triumph of our New York yacht over all those in Old Albion, Commodore Stevens has sold her for $35,000 to a captain De Blaquier of the Indian army; she will be used as a model yacht, and this shows much wisdom in uncle John, but although she carries the broom in old England she was beat here before she went away; so in a few years more we will send over another to beat them all as far as the America beat the Titania, or else they will so improve as to beat us. Yacht building has been confined to a few yards in England, and when this is the case in any place, the road to improvement is sure to be hedged up. It is to the credit of the English however, that whenever a nautical improvement is made manifest, they adopt and pay well for it.

Fayettville, N. C.

A valuable correspondent sends us the following particulars concerning the progress of this enterprising place.

Fayettville is situated at the head of the Cape Fear Navigation Co., 130 miles from its mouth navigable for steam boats; the population 3,500. We are now building four plank roads, the longest 120 miles, the shortest 28 miles; in this county there are 7 cotton factories running 325 looms and about 13,000 spindles. Our plank roads cost $1,300 per mile. There is a company engaged in opening the river above us called the Deep River Navigation Co., they are engaged in constructing dows and locks at five different points. About 40 miles above on the river, an immense bed of coal has been discovered; a company from Boston having bought the land are now engaged in opening the mines. The coal is anchricito bituminous and anti-bitter. The only public building of any importance is the United States Arsenal, one of the handsomest in the United States."

Assyrian Antiquities.

Valuable discoveries have recently been made by Col. Rawlinson in deciphering the inscriptions found on the great Assyrian Bull, discovered by Layard, and it refers to the war of Sennacherib and Hezekiah mentioned in the Bible.

The "Cow Milker" which was illustrated in number 1 volume 6, Sci. Am., has recently been patented in England, and has created no small sensation there among some of the dairy farmers.

Mr. W. B. Bement, formerly draughtsman and designer for the Lowell Machine shop, has commenced business in Philadelphia, as will be seen by reference to our advertising columns. He is a capable, enterprising young man, and has our best wishes for his success.

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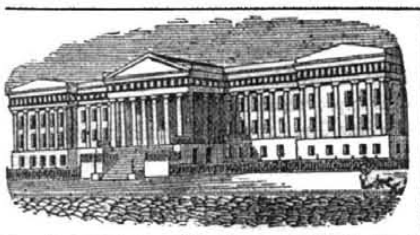

☞ Reported expressly for the Scientific American, from the Patent Office Records Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which the public are accustomed to refer for the latest improvements. No charge is made except for the execution of the engravings, which belong to the patentee after publication.

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING SEPTEMBER 9, 1851.

To H. L. F. Gavett, of Jackson, Mich., for improvement in machines for making Sod Fence.

I claim the combination of the cutters and mould boards for cutting and turning the sod on edge, with the inclined adjustable spring rollers for raising, packing, and forming the sods into a fence, as described.

To Moore Hardway, of Troy, N. Y., for improved Hook-heading Motion for Spike Machines.

I claim the employment of a header, made to have a descending and afterward a horizontal front-ward movement, for the purpose of first bending the end of the piece of iron downward, and then forcing it horizontally against the end of the die, and thus form a hook head, as described.

To E. F. Southward, of Wellfleet, Mass., for improved method of making Sails.

I claim bringing straight cloths upon the leeches and making all the head cloths parallel therewith, and uniting the goring cloths in the bunt of the sail, as described.

To Wm. Ball, of Chicopee, Mass., for Gold Amalgamator.

I claim the combination of the partition (dipping below the surface of the water.) with the lower distributor, provided at the centre with a discharge aperture for the water and light particles, and, at the periphery, with apertures for the discharge of the water and heavier particles, for the purpose of preventing the escape of gold over the central or waste pipe.

I also claim the arrangement of the sliding tube ferule or waste gate, directly upon the hollow axle of the lower distributor,—the same being for the purpose of regulating the head of water within the said distributor.

I am aware that it is not unusual, in gold washers, to use a succession of baths; therefore I do not claim such arrangement in general; but I also claim arranging the secondary mercury bath, concentric with and below the primary one, in such a manner that the currents of water, etc., return towards the centre of the apparatus; thereby saving room, and causing the said currents to pass more slowly.

To Alfred Gregory, of Brooklyn, N. Y., for improvements in Equalizers of Power Regulators.

I do not claim the mere employment, as an equalizer or regulator of a piston operated by acting against pressure, alternately, each stroke, the said piston having two strokes for one of the engine or other mover it works in connection with, as such has already been done. Nor do I claim separately exposing the equalizer piston to the vacuum of the condenser; but I claim the use of steam or other gas, to operate upon the piston of the power regulator or equalizer, the said steam or gas being derived from the same reservoir that supplies the engine.

[See Vol. 6, No. 31, Sci. Am.]

To S. A. Hudson, of Worcester, Mass., for improvement in Sword Canes.

I claim a sword cane, consisting of the rod with blade attached, passing through the entire shaft and giving point beyond it, whether said rod be or not connected with a spiral spring to draw the blade back into the handle.

I do not claim the application of the spiral spring as an adjusting power; nor do I claim the saw, applied as a stop, neither of which is substantially new.

To Erastus Lawrence of Dublin, Ind., for improvement in Washing Machines.

I claim the combination, substantially as described, of the levers, link-bar, and rubbing-board, for the purposes specified.

To G. W. C. Gillespie, of Burlington, Iowa, for improvement in Axles of Wheeled Cultivating Plows.

I claim hanging one or both of the axles of the wheels to the carriages of cultivators, gangs of plows, seed drills, etc., to the frame of the carriage, so as to vibrate the axle or axles, or suffer them to vibrate, and keep them at right angles to the motion of the plows, when moving in a direct line; and when turning the plows to keep the axle or axles, in the direction of the radius of the circle, or nearly parallel with the radius of the circle formed by the track of the wheel turning said axle; when the plows constituting the gang are placed diagonally, one behind the other in succession, and the wheels to the carriage of the same are also placed diagonally one behind the other.

To J. J. Sturgis, of New York, N. Y., (assignor to H. H. Green), for improvement in Type Casting Machines.

I claim the employment of the lever, having an adjusting slot-adjuster, matrix spring holder, and their combination with the horizontal slide slide-ways (two) and matrix spring, substantially in form and manner and for the purposes set forth.

I claim, also, the employment of the adjusting supporting piece and the combination therewith of the horizontal slide and levers (three) substantially in form and manner and for the purposes described.

And I also claim the combination and arrangement of the horizontal slide, slide-ways, and levers, operated thereby for the purpose of obtaining a horizontal and oblique action of the machine.

To Randolph Kreter, of New York, N. Y., for improvement in Pianoforte Action.

I claim the repeating check or tongue, connected with a lever hinged to the hammer rail and resting on the key, the under side of the hammer butt being provided with an arm which rests against the upper end of the face of the repeating check, substantially as and for the purpose specified.

To J. C. Burch, of Evansville, Ind., for improvement in Dental Forceps.

I claim the compound lever forceps, as described, or the compound lever and the movable fulcrum, applied to forceps, by means of which the roots of decayed teeth, or broken teeth, may be readily and easily reached and extracted.

To J. A Gray, of Albany, N. Y., for improvement in Pianoforte Action.

I claim the shoulder under which the hopper plays, attached to the hammer butt by a centre pin, forming an independent oscillating shoulder to the hammer but, said shoulder being usually detached from the hammer butt or composing a part of it.

I also claim the extension of the back part of the shoulder down, so as to connect it with a spring.

To R. M. Kerrison, of Philadelphia, Pa., for improvement in Pianoforte Action.

I claim the jack, consisting of a crooked lever, and a straight, or nearly straight lifter or pusher, acting conjointly on the general principle illustrated.

I also claim the peculiar action of the spring to govern the alternate bending and straightening of the jack by acting one prong or tooth between two other prongs or teeth, with due allowance of play or shake, according to the desired degree of drop of the hammers from the string, known as the scape.

To C. J. Carrington, of Waterbury, Conn., for improvement in fastening Hooks and Eyes to paper cards.

I claim nothing for the machinery with which the work is done; nor for the mortise like holes which belong to Atwood's Patent; but I claim the confining of the eye by means of the longitudinal cut or slits, whether one or more is used, in the card, parallel with the rows of holes, admitting through it or them a portion of the eye, as herein described and applied, or in any manner substantially the same.

To C. R. Hurlbut, of Waukau, Wis., for improvement in Gauges used in Turning.

I claim the gauge with its graduated slide capable of being set to any given diameter, the whole being suspended upon a horizontal wire and operating as set forth.

To G. F. DeDouhet of Paris, France, for improvement in the Manufacture of Paints. Patented in England June 1, 1851; in France Oct. 5, 1850.

I claim the manufacture by the processes substantially as herein described, of new colors fit for painting, whether with oil, varnish, spirits of turpentine, or water, by means of the deoxydation of the soluble metallic sulphates, of zinc, copper, iron, and other metals, and by the precipitation of their bases, either by alkaline hydro-sulphurets, whose sulphates are soluble, such as those of soda, potash, and ammoniac, to obtain colors with a single metallic base, or to obtain colors with a double base, partly metal and partly alkaline sulphate, by using the alkaline hydrosulphurets, whose sulphates are insoluble, such as those of baryta, of strontium, and of lime, and even by the hydrated sulphurets and polysulphurets of lime, prepared directly, substantially as set forth.

DESIGN.

To Charles Zeuner, of Cincinnati, O., (assignor to M. Greenwood & Co.) for Design for Shovel Stands.

A New Material for Lighthouses, Sea-Walls, Paving, &c.

Among the various plans for Lighthouses, that of the Eddystone seems to hold the most distinguished place, on account of having proved adequate to resist great strain while occupying a comparatively small bulk. Its strength and stability are mainly dependant upon the weight and solidity of the lower portion, by which it is anchored fast in its place, the lower courses also being scarfed and trenailed to the rock; the blocks and courses are made mutually sustaining by a number of contrivances, viz., dovetailing and scarfing together the stones in the same course; trenails and joggles to prevent lifting or horizontal shifting; wedges, cement, cramping irons, imbedded chains, &c., according to the varying requirements in the different portions of the structure. The vast amount of labor in the preparation of the stone blocks suggests itself to some as an insuperable barrier to the erection of this description of lighthouse, but the building whose first cost is the least, is not necessarily the most economical, for an illustration of which a comparison of the late pile lighthouse on the Minot Rock, erected in 1848, and the stone column Eddystone Lighthouse, erected in 1759, may afford data for a calculation.

I propose to construct lighthouses and other marine works, such as the facing courses of breakwaters, sea-walls, harbors, &c., of a material which is heavier than granite, answering the requirement of solidity—one of the principal points in lighthouses on Smeaton's plan; stronger than granite in respect to cohesion of its parts, and therefore better adapted for processes of interlocking and scarfing; more readily shaped than granite, as it is made in a mould of any desired form, and may be provided in the same operation with all the required holes, recesses, grooves, projections, &c., for purposes of attachment; and cheaper than granite, from the saving of hand and machine work, in bringing the blocks to the determinate form, and providing them with the means of attachment to each other, as above spoken of.

By filling broken granite (previously gradually heated) into a mould of any desired form, and pouring in molten iron—which fills every interstice between and around the stones,—a conglomerate is formed at an expense (varying with the cost of material in different places) of about $2 per cubic foot, and of any required shape for interlocking; while, by means of cores, it is furnished with all the trenail holes, the recesses for the joggles, the grooves for the wedges, the dovetailed hole for the lewis for manipulating it, and for any other species of bond or attachment that can be devised. The granite not being disintegrated by the contact of the metal, which latter has a continuous honey-comb-structure, the conglomerate has great power of resisting compression and great tensible strength, the two qualities which give it value in this connection; its strength being as a cellular block of iron, with its cavities so filled with granite as to preserve its chambers from being crushed in.

The cost of the conglomerate, as has been said, will vary in different places; the refuse of the granite quarry is what is required, and iron of sufficiently good quality for the purpose may be had at low rates. The proportions of the two materials may vary according to the purpose to which it is to be applied; it may consist of three parts, by bulk, of granite and one of iron, in which proportions its cost is less than of the masonry in the stone column lighthouses referred to.

G. H. KNIGHT.

Cincinnati, O.

Spontaneous Combustion of Hay Stacks.

I have seen in one of the numbers of the Scientific American, the necessity of having conductors to barns to carry the lightning from the buildings. In the neighborhood where I live, the farmers lose more by spontaneous combustion than by electricity. Three of my neighbors had stacks burned this season; one of them had four large stacks consumed, and a large part of another. This one stack contained thirty tons of hay, and it was only by the greatest efforts of neighbors that a portion was saved. I was one of the number who worked very hard from ten o'clock P. M. to sun-rise to put out the fire and remove the unburnt hay.

The stacks had been smoking for some time, and giving out a disagreeable smell, so a watch was kept upon them, but the first stack was on fire before the alarm could be given and the surrounding ones were on fire by the time the neighbors arrived, when they at once commenced to put on water and remove the hay. One stack appeared to be charred from top to bottom, and it gave out a most disagreeable and suffocating gas. It did not seem to be very warm, but when it came in contact with the atmosphere it took fire. All the stacks burned were composed of "meadow hay," no clover nor timothy. It had been dry for a long time before the burning of the stacks.

If any of the Scientific readers of your paper could discover the cause of the burning, it would be of great importance to farmers having meadow hay. M. S. WOODWARD.

Marshalton, Pa.

[Almost all our farmers have their hay heated more or less, in stacks or in the mow. This is caused by stacking before the hay is thoroughly cured—there can be no doubt of this. Every particle of gas that escapes from heated hay, is the loss of so much nutriment, and in every case it should be carefully guarded against. We have heard some farmers say that "a little heating did no hurt" but this is a very wrong notion to be entertained by any man. Thoroughly cured hay will not heat easily. The cause of the spontaneous combustion among meadow hay may be due to some peculiar plants mixed with the common hay, these may contain a large amount of phosphuretted hydrogen, and this gas along with the carbonic gas of the hay, will ignite very readily when supplied with atmospheric air.

If the hay was built over a ventilating frame, hollowed upwards in the centre, we believe that not one stack would be consumed for four that now meets with such a misfortune.

The Floating Bridge Across Lake Champlain Completed.

The Champlain Beacon of Saturday thus speaks of it:—

On Monday, for the first time in the history of the world, Lake Champlain was crossed by a train of cars. The floating bridge emerged from its slips—the monster "Sea Serpent" crept forth from his den, and stretched his huge proportions from pier to pier, connecting shore with shore, State with State, New England with the West. Without difficulty or accident, and with as little delay as could be expected on the trial of this novel and grand invention—the youngest born of Campbell's scheming brain—the whole Boston train, engine and all, passed safely over from the Vermont to the New York shore of Lake Champlain. The excitement and enthusiasm were indescribable. The monster depot,—500 feet long by 100 broad—the wharf, the piers, the hotel, were crowded to their utmost capacity.

The First Locomotive in America.

The first locomotive ever used in the United States is still in good running order on the Little Schuylkill Railroad. It was built in Liverpool, England, by Edward Bury. At that time it was necessary to send a man from England to put the engine in running order on the road. It was but twenty years ago that Edward Bury's engine was first placed upon our road. Since then the iron track has been extended throughout our land; the fierce breathing of the iron horse is heard in almost every valley; the ingenuity of our mechanics enables them to supply our own engines and furnish them to nations across the Ocean. We're a progressive people.

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TO CORRESPONDENTS.

J. B. R., of Ala.—Accurate plates of all kinds of engraving are now prepared in type metal at a mere trifling cost, compared with the ordinary wood engravings. The process is very simple and easily carried out.—$2 received,

B. G. B., of Mass.—We are prepared to receive diagrams of your discovery. We hope that you will meet better success than your predecessors in developing new laws.

T. S., of Ohio.—The suggestions you offer in regard to the republication of the back numbers of the Sci. Am., has occurred to us several times. We presume encouragement sufficient would be given, but it is difficult for us to undertake the job for want of time to attend to it.

J. H. B., of O.—Mr. Phillips has already provided for the same arrangement as you refer to. You could not patent it.

G. W. P., of Pa —The planing machine you describe appears to be on the plan patented by Mr. Emmons. You could not secure a patent—as we view it. There appears to be novelty in your apparatus for sawing, and we have to request you to forward a model. We shall send you the Scientific American—$2 received.

R. C. E., of Ct.—Insulation is a metaphorical term applied to a body containing a quantity of electric fluid, and surrounded by non-conductors; so that its communication with other bodies is cut off.

O. C. H., of Buffalo.—Pyrites are a compound of sulphur and iron, usually occurring in yellow shining crystals like brass, and in almost any rock, stratified or unstratified.

S. A. D., of N. Y.—The suggestions you offer, are very well; but we shall not be able to publish them, to the exclusion of other matter adapted to the interests of our readers.

A H., of N. Y.—Your letter was forwarded to the P. O. on the 9th inst. The names written on your letter had no particular meaning, we presume.

N. S., of R. I.—You had better send us a sketch and description of your wheel. Then we will advise you in regard to its novelty.

F. S. J., of N. Y.—We do not know the exact amount of zinc requisite to magnetize a piece of soft round iron; but, a piece of soft round iron can only be made into a temporary magnet—a very small quantity is requisite to do this, if the wire is very fine. Zinc is the cheapest metal to use in the battery.

G. W. C., of N. Y.—The changing of the needle by the iron being held above and below, was first noticed by Oersted, in respect to Electro-Magnetism, but the needle only turned at right angles. Your experiment shows that in one direction your iron was attracted, in the other repelled. This is all the change we can see that has taken place.

R. C., of Pa.—The mere application of a well known device, or mechanical movement for a new purpose, does not constitute a patentable subject.

N. R. B., of Vt.—The Wilson Sewing Machine is the best adapted for family use of any that we are acquainted with.

A. S. C., of La.—We could not send you a bound volume by mail; they weigh over the amount provided by law—30 oz. We can send you a copy of Scribner's Mechanic, and pre-pay the postage to you for $1,50.

S. M. B., of Vt.—The Government fees for filing a caveat are $20.

L. F. M., of N. Y.—We have entered you for an extra copy as you requested. We cannot inform you where the instrument may be had.

A. D. S. of Ohio.—We are much obliged to you for the article on inks, we shall publish it soon.

P. M. E., of N. C.—We have published all the information we possess concerning the use of rosin and sand in laying bricks, but we suppose it must be used while warm of course.

T. L., of C.—A rod extending 10 feet will, we are informed protect an area of 30 feet circumference Two rods thus elevated one at each end, will protect your building of 60 feet long.

H. W. H., of Conn.—The piston should move.

J. R., of Ill.—We cannot give you the desired information about the corn starch; the process is kept secret—we may obtain it bye and by, but cannot at present.

R. S., of Mich.—You could not obtain a patent for making a rifle with 8 grooves, nor do we think it would be a good plan; three in our opinion is plenty.

W. H. H., of N. Y.—The purchaser of a right in your invention must confine his sales of the manufactured article to the territory which he has purchased.

C. & O. of Md.—Your supposition is correct.

G. W., of N. Y.—The subject of buildings and their arrangement for sounds is yet imperfectly understood. We can only give an opinion based upon little experience. The cross curtain should deaden the echo in a measure, as it will break the vibrations which cause the echo.

B. P., of Me.—What do you mean by the horizontal head, and the rotary cylinder? Do you not mean the head which hold the planing tools. If so you cannot make the change without infringing the Woodworth patent.

W. S. J., of R. I.—Yours will receive attention next week.

H. B. A., of Ark.—We should be sorry to know that any person involved himself in expenses to get a patent for a device in your diagram. We have known the same thing tried before, but for a different purpose There is too much constrained friction about the workings. Nothing can equal the crank, nothing, for it is a most beautiful compensating device.

J. G. E., of N. C.—We do not know of a single work to meet your expectations. It strikes us that Josiah Holbrook has produced a box to illustrate Grund's Solid Geometry: he least showed us some of them four years ago. He was in Washington last year, but we do not know where he is at present.

Money received on account Patent Office business for the week ending September 13th.

J. W. & Co., of Mass., $20; J. T., of Phil., $30; W. H. N., of Conn., $30; A. L. S. of N. Y., $30; F. & N., of N. Y., $23; V. B. S., of Conn., $50; T. B. W., of N. Y., $59; S. W. and K. M. D., of Mass., $50; M. S. B., of Conn., $45; D. T., of N. Y., $10.

Specifications and drawings belonging to parties with the following initials have been forwarded to the patent office during the week ending September 13th.

P. H. K. of N. Y.; N. & F., of N. Y.; D. T. of N. Y.; G. W. T., of Mass.

Back Numbers and Volumes.

In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

Of Volumes 1, 2 and 3—none.

Of Volume 4, about 20 Nos.; price 50 cts.

Of Volume 5, all, price, in sheets, $2; bound, $2,75.

Of Volume 6, all: price in sheets, $2; bound, $2,75.

New Edition of the Patent Laws.

We have just received another edition of the American Patent Laws, which was delayed until after the adjournment of the last Congress, on account of an expected modification in them. The pamphlet contains not only the laws but all information touching the rules and regulation of the Patent Office. We shall continue to furnish them for 12 1-2 cts. per copy.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office;—stating the name of the patentee, and enclosing one dollar as fee for copying.

Postage on Books.

Subscribers ordering books or pamphlets through us are particularly requested to remit sufficient to pay postage, or we cannot attend to their orders. We are obliged to pay from 10 to 50 cents every time a pamphlet or book is sent by us through the post and the justice of our demand is made apparent.

ADVERTISEMENTS.

Terms of Advertising.

One square of 8 lines, 50 cents for each insertion.
" 12 lines, 75 cts., " "
" 16 lines, $1,00 " "

Advertisements should not exceed 16 lines, and cuts cannot be inserted in connection with them at any price.

American and Foreign Patent Agency

IMPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express or any other convenient medium. They should not be over 1 foot square in size, if possible.

Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents. In the item of charges alone, parties having business to transact abroad, will find it for their interest to consult with us, in preference to any other concern.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

Foreign Patent Office.

MESSRS. MUNN & CO. transact business connected with Patents in all European countries, where this species of property is recognized. They take pleasure in referring parties to Smith Dunning, Jr., N. Y.; Ebenezer Barrows, N. Y.; Charles Starr, Bible House; William Van Anden, Poughkeepsie; Mortimer & Gardiner, Charleston, S. C.; William Bushnell, N. Y.; J. S. Prouty, Geneva, N. Y.; Gail Borden. Jr., Galveston, Texas, and to all others for whom they have done business.

MACHINISTS TOOLS FOR SALE.—The Maryland Machine Manufacturing Co., having suspended operations, offer all their Machinery and Tools for sale. The assortment is large, has been in use but a short time, and is of the most improved kinds. For particulars apply to the undersigned.
GEORGE POE. Agt.,
Ellicott Mills P. O.
4t* Maryland.

WE HAVE FOR SALE, a bound set of the London Patent Journal; consisting of the first 10 volumes. It is a valuable work for the Inventor, Mechanic, or manufacturer. The last Volume comes up to near March 29, 1851. Price $30.
1* MUNN & CO.

RAILROAD CAR MANUFACTORY.—TRACY & FALES, Grove Works, Hartford, Conn. Passage, Freight and all other descriptions of railroad Cars, as well as Locomotive Tenders, made to order promptly. The above is the largest Car Factory in the Union. In quality of material and in workmanship, beauty, and good taste, as well as strength and durability, we are determined our work shall not be unsurpassed. JOHN R. TRACY,
39tf. THOMAS J. FALES.

KELLY & CO., New Brunswick, N. J., Foundry and Machine shop, manufacturers of stationary Engines, India Rubber Machinery, Mill Gearing, and stove castings &c. Articles made in the machinery line to order with dispatch and in the most workmanlike manner. Parties wanting machinery or castings made will be waited on within any reasonable distance. Orders solicited. 47 12*

A. B. WILSON'S SEWING MACHINE—We are now selling the rights for territory for this incomparable machine at low rates. We furnish to the parties the best and only practical Sewing Machine—not larger than a lady's work-box—for the trifling sum of $35. Examine for yourselves at 195 and 197 Broadway, room 23, Franklin House Buildings, N. Y. GEO. R. CHITTENDEN, Agent. 51 2*

PALMER'S ARTIFICIAL LEGS.—Manufactured at Springfield, Mass., and 376 Chestnut-st. Philadelphia, by Messrs. Palmer & Co.—All orders from New York and New England must be made to Palmrr & Co. Springfield, Mass.—"I have examined carefully the Artificial Leg, invented by Mr. B. F. Palmer; its construction is simple and its execution beautiful; and what is most important, those who have the misfortune to require a substitute for a natural limb and the good fortune to use it—all concur in bearing practical testimony to its superiority in comfort and utility. VALENTINE MOTT.
New York, Jan. 29, '51. 39 6meow*

CHILD'S PREMIUM SAW MILL.—To Plank Road Contractors and Lumbermen generally.—The subscriber having obtained a patent for improvements in circular saw mills, by which large timber can be cut with as great facility as small, and with one half less power, and one-third less waste of timber than by ordinary mills, offers mills and rights on reasonable terms. For illustration see Scientific American of March 15th, 1851. O. C. CHILD.
Granville, Ill., May 26, 1851. 39 9oew*

JACK-SCREW FOR RAISING BUILDings, Locomotive Engines, and other heavy bodies, also double and single threaded vice screws, mill screws for raising mill stones, cheese press, car penter's clamps, and music stool screws, all of which are warranted to be superior articles; manufactured and for sale wholesale and retail by Tolman & Brown, Hinsdale, N. H. "We have examined the screws manufactured by Messrs. Tolman & Brown, and believe them to be of the finest quality, both as regards the Workmanship and durability. MUNN & Co." 484*

MARSHAL, BEMENT, & COLBY.—Manufacturers of Machinists' Tools, Callowhill street, west of Schuylkill 3d, Philadelphia, are ready to execute orders for Slide and Hand Lathes, Planing Machines, Upright Drills, Upright Boring Machines, Screw Cutting and Tapping Machines with Gates' Patent Dies and Taps, Gear Cutting Engines, Shaft-Pulleys, Hangers, &c. Orders for Machinery, Iron and Brass Castings and Patterns, promptly executed. E. D. Marshall, Wm. B. Bement, G. A. Colby. 1 4*

TO ENGINEERS.—A new Work on the Marine Boilers of the United States, prepared from authentic Drawings and Illustrated by 70 Engravings—among which are those of the fastest and best steamers in the country—has just been published by B. H. BARTOL, Engineer, and is for sale at the store of D. APPLETON & CO.,
1 12* 200 Broadway.

TINMEN'S IMPROVED MACHINES.—Dealers and workers in Tin Plate and Sheet Metals are hereby informed that the subscribers have the exclusive right of manufacturing "Wright's Patent" Sheet Iron Folding Machine; No. 1, two and a half feet, and No. 0 five feet in length. "Flanders' Patent" Rotary Shears, for Cutting Circles of 3 to 20 inches in diameter, from tin and other metals, and turning an edge on the same at one operation. Also for cutting circles from paper or pasteboard. "Walker's Patent" Tin Folding Machine; No. 1, 17 inches, and No. 0, 20 inches in length, (a new article). By the use of the above much labor may be saved and many kinds of work done that no other machine will do. The above, together will all kinds of Tinners' Machines and Hand Tools, of superior quality, are for sale at our Works, East Berlin Station, on the Middletown Railroad, and by our agents in most of the principal cities. ROYS & WILCOX. 51 2*

TO MILLERS.—My attention has lately been attracted by an extensive hand-bill, circulated in the West and South by a Mr. James M. Clark, or some one interested in vending a certain Patent Mill of his invention. In said handbill strong inducements and flattering encouragements are held out to induce the milling community to purchase said Mill for the purpose of re-grinding the entire offal by a continuous operation; and through the medium of your paper I wish to caution the public, that, by adopting the plan suggested by Mr. Clark, they will surely infringe "Bonnell's Process," which was patented Aug. 14, 1849, and they will be held accountable. Persons wishing rights of "Bonnell's Process," can have them on low terms by applying to the patentee, at Tecumseh, Mich. D. P. BONNELL. 51 3*

A LARGE LATHE FOR SALE CHEAP.—A new Lathe, 16 feet long, swings 31 inches, turns 12 1-2 feet; has 25 changes of screw gear, weighs about 5,000 lbs., has counter shaft, &c. Price $550, cash. Apply to S. C. HILLS, 12 Platt street, where the lathe can be seen. 51 4*

HUTCHINS' CRANK INDICATOR.—The subscriber having purchased the entire right of Hutchins' Patent Crank Indicator, would respectfully inform the public that he is ready to supply orders or sell territory. The Indicator has been used aboard the "Northerner," "Bay State," "Cataract," "Niagara," "Ontario," and "Lady of the Lake," the Captains and Engineers of which have all given their testimonials of approbation. Address G. S. WORMER, Steamboat Office, Oswego, N. Y. 51 6*

CHICAGO SEED STORE AND AGRICULtural Warehouse.—The undersigned have formed a co-partnership under the name and style of Starkweather & Hooker, for the purpose of establishing a depot in Chicago, for the purchase and sale, on commission or otherwise, of Seeds, Agricultural and Horticultural Implements, Machines, &c., of every description respectfully solicit the attention of agriculturists and manufacturers of implements, to our establishment, and give assurance that every facility will be offered for ready sale on the most advantageous terms. C. R. STARKWEATHER,
48 4* J. W. HOOKER.

WANTED.—A situation is wanted by a person capable of planing and constructing furnaces for smelting iron ore, or erecting rolling mills. He is an experienced mechanic, thoroughly conversant with the iron business, and would like a permanent situation in some of the Southern States. Address M. E., Dover, N. J. 45 10*

SCRANTON & PARSHLEY, Tool Builders, New Haven, Conn., have on hand six 12 ft. slide lathes, 28 in. swing; also four 8 ft. do.; 21 in. swing, with back and screw gearing, with all the fixtures; one 5 ft. power planer; 12 drill presses, 4 bolt cutting machines, 30 small slide rests; 5 back geared hand lathes, 21 in. swing; 15 do. not geared; 8 do. 17 in. swing on shears 5 1-2 feet; 25 ditto with and without shears, 13 in. swing; counter shafts, all hung if wanted suitable to the lathes. Scroll chucks on hand; also index plates for gear cutting. Cuts of the above can be had by addressing as above, post-paid. 47tf

BEARDSLEE'S PATENT PLANING MAchine, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway, Albany. GEO. W. BEARDSLEE. 43tf

TO PAINTERS AND OTHERS.—American Anatomic Drier, Electro Chemical graining colors, Electro Negative gold size, and Chemical Oil stove Polish. The Drier improves in quality by age—is adapted to all kinds of paints and also to Printers' inks and colors. The above articles are compounded upon known chemical laws and are submitted to the public without further comment.—Manufactured and sold wholesale and retail at 114 John st. N. Y. and Flushing L. I. N. Y.; by
QUARTERMAN & SON
48tf Painters and Chemists.

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 38tf

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers—from 1 1-4 to 7 inches in diameter. The only Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany—for Locomotive Marine and other steam Engine Boilers.
THOS. PROSSER & SON, Patentees,
16tf 28 Platt-st. N. Y.

LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post.paid) MUNN & CO.
At this Office.

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A CARD.—The undersigned begs leave to draw the attention of architects, engineers, machinists, opticians, watchmakers, jewellers and manufactures of all kinds of instruments, to his new and extensive assortment of fine English (Stubs) and Swiss Files and Tools; also his imported and own manufactured Mathematical Drawing Instruments of Swiss and English style—which he offers at very reasonable prices. Orders for any kind of instruments will be promptly executed by F. A. SIBENMANN Importer of Watchmakers' and Jewellers' Files and Tools and manufacturer of Mathematical Instruments 154 Fulton st. 42 3m*

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WOOD'S IMPROVED SHINGLE MACHINE—Patented January 8th 1850, is without doubt the most valuable improvement ever made in this branch of labor-saving machinery. It has been thoroughly tested upon all kinds of timber and so great was the favor with which this machine was held at the last Fair of the American Institute that an unbought premium was awarded to it in preference to any other on exhibition. Persons wishing for rights can address (post-paid) JAMES D. JOHNSON, Easton Conn.; or WM. WOOD, Westport; Ct. All letters will be promptly attended to. 37tf

LEONARD'S MACHINERY DEPOT, 109 Pearl-st. 60 Beaver N. Y.—The subscriber is constantly receiving and offers for sale a great variety of articles conne ted with the mechanical and manufacturing interest, viz.: Machinists' Tools—engines and hand lathes; iron planing and vertical drilling machines; cutting engines, slotting machines; bolt cutters; slide rests; universal chucks &c. Carpenters' Tools—mortising and tennoning machines; wood planing machines &c. Steam Engines and Boilers from 5 to 100 horse power. Mill Gearing—wrought iron shafting; brass and iron castings made to order. Cotton and Woolen machinery furnished from the best makers. Cotton Gins; hand and power presses. Leather Banding of all widths made in a superior manner; manufacturers' Findings of every description. P. A. LEONARD. 48tf

MANUFACTURE OF PATENT WIRE Ropes and Cables—for inclined planes, suspension bridges, standing rigging, mines, cranes, derick, tillers &c.; by JOHN A. ROEBLING; Civil Engineer—Trenton N. J. 47 1y*

AARON KILBORN, No. 4 Howard st. New Haven—has on hand and is now finishing five 14 horse power engines; price including boiler and all fixtures $1200; twelve of from 12 to 6 horse power—all of the most approved patterns—iron bed frame and pulley balance wheel. Galvanized Chain and fixtures for chain pumps always on hand and for sale. 45 10*

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SCIENTIFIC MUSEUM.

Fire Engines.

In your paper of the 9th ult., I notice under the head of "A Powerful Engine," a statement of the power of "Nameang" engine of New London. The playing mentioned in that statement was done in this city, and I hereby add my testimony to that of your correspondent, and for further proof of the power of the engines built by Mr. Jeffers, I give the following additional facts, the most of which I know to be true. The same engine has thrown two one-inch streams 150 feet high, through 50 feet of hose, and through 575 feet of hose 90 feet high. Another one of his engines, with 36 men, drew her water, forced it through 400 feet of hose, and threw an inch and 1-16th stream 156 feet high; and through 50 feet of hose threw an inch and 3-8th stream 153 feet high. The same engine, while the company were on a visit to Lowel, last summer, threw an inch and 1-4 stream 200 feet horizontally. A second-class engine of the same make, whilst at Springfield, two years ago, with 14 feet of suction hose, forced water through 300 feet, and threw 7-8th and 1-16th inch stream 180 feet high; and at another time, when at Fall River, it threw 206 feet horizontally, through 50 feet of hose. In each case of horizontal playing the measurement was from the end of the discharge pipe. All these trials were made by end-stroke engines. His side-strokes are smaller, requiring less men to work them. One of this kind, which has lately been sent to Augusta, Georgia, was worked in this city, it threw an inch stream 179 feet 9 inches through 300 feet of hose. These statements are the results of fair trials, and can be substantiated in every particular. Mr. Jeffers' engines differ from others only in his superior arrangement of the working parts. Everything about them is compact; his water-ways are all large, and everything arranged to make as little friction as possible. They are constructed so as to change the capacity in a few seconds, so as to be worked by from 10 to 48 men.

WM. S. JOHNSON.

Providence, R. I., Sept. 8, 1851.

[The above is good working. A few evenings ago we witnessed the performance of one of Mr. Smith's compact side levers, which threw an inch stream 152 feet high with apparent ease. The engine is named the Mississippi, and is for a New Orleans Company, and is certainly a beautiful and excellent machine.

A new engine has been constructed for No. 1, of this city, by Mr. J. Tarr, of Albany, N. Y., which, it is said, has thrown a stream of water from a 7-8th nozzle to the distance of 150 feet, when worked by only 8 men. On top of the air-barrel is fixed an ingeniously contrived whistle, which can be distinctly heard for a mile, and which will be found very useful in directing members to their engines when engaged at fires.

A discovery in Surgery.

A Prussian named Aran is said to have recently made a discovery in surgery, that is exciting considerable interest in the scientific circles of Berlin. It is the application of chlorine to relieve pain. Unlike chloroform it can be used without the least danger to the patient, and is very effectual in its operation. From the account, a small quantity of the fluid, (from ten to twenty drops) is dropped on the part affected, or on a lint bandage slightly moistened with water, and then applied, and all bound up in oil silk, and a linen band. After from two to ten minutes the part becomes insensible, and the pain is no longer felt, whether it be from rheumatic, nervous, or other disorders. After a time it returns again, but usually weaker, and with several applications it is often entirely relieved. The discoverer has presented a memorial on the subject to the Academy at Paris.

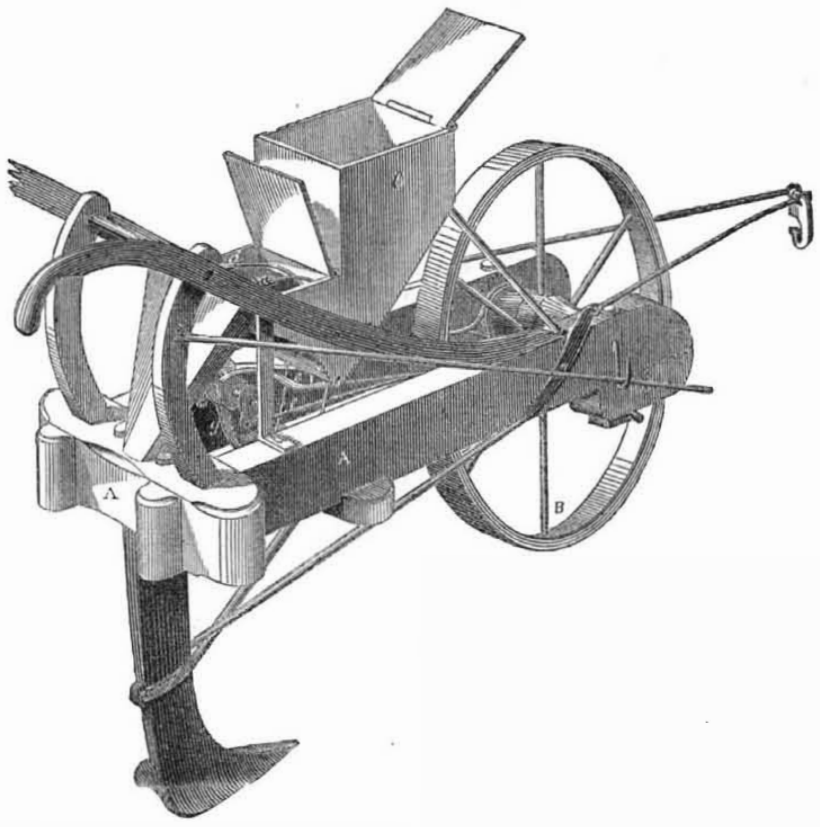
Marine Glue.

This is a composition of 2 or 4 parts of the caoutchouc, in paste, dissolved in 34 parts of mineral oil of coal, to which is added 62 or 64 parts of shellac in powder; the whole is heated so as to obtain a complete mixture, and then made into cakes. For use it is melted in iron kettles, taking care not to let it burn, and applied with a brush on the surface of the pieces of wood to be glued, and then pressed until cold. This glue is very good for patterns used in foundries, and pieces united with it can be kept in water without separating. If struck with heavy blows it will rather break than separate, a fact which has been proved by making cannon balls of several pieces, which, shot against hard rocks, did rather break than separate in the joints.

Ancient and Modern Strong Men.

A paper was read before the British Association, entitled "A Comparison of Athletic Men of Great Britain with Greek Statues," by Mr. J. B. Brent. Mr. Brent in order to obtain those of the athletic, measured and weighed celebrated boxers, cricketers, wrestlers, rowers, pedestrains and others. These he compared to the height and weights of soldiers and policemen, and then with celebrated Greek statues. And from such a comparison it appears that the wrestlers of Cornwall, Devon, and the north of England are not inferior to those statues.

BARNHILL'S PATENT SEED PLANTER.---Fig. 1.



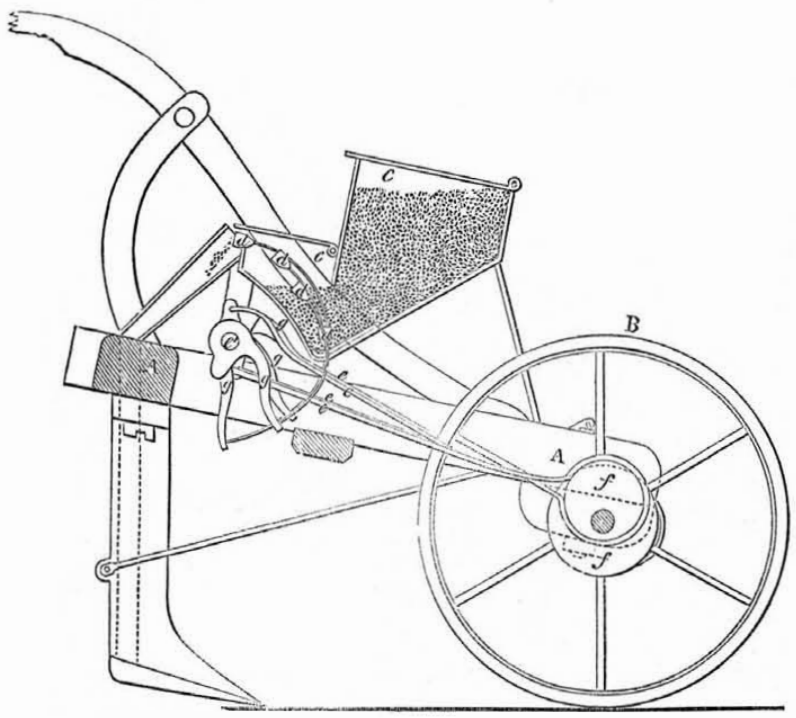
The accompanying engravings represent an improvement in Seed Planters, invented by Mr. Jacob Barnhill, of Circleville, Pickaway, Co., Ohio, and secured to him by patent on the 7th of last May (1851).

The nature of it consists in the mode by which the seeds are made to issue from the lower box and are discharged; This is done by a series of four or more conical cups attached to segmental rods working through leather in the bottom of the box and extending from levers upon a horizontal shaft under the seed box; these cups are made of any capacity corresponding with the quantity or kind of seed to be sown, and are alternately raised and lowered in the inside of the lower box by means of levers operated by eccentrics and rods.

Figure 1 is a perspective view, and figure 2 is a side elevation, with the side of the frame and the box removed. The same letters refer to like parts.

A A is the carriage frame, which is supported at its front end by wheel, B, and provided with handles at its rear end for guiding, resembling, thus far, a harrow or cultivator. C is the double box for containing the seed, these boxes are connected with each other at the bottom, but one part is higher than the other

Figure 2.



and is capable of holding a larger quantity of seed, so that as fast as the seed is removed by the conical cups, a corresponding quantity will descend and keep the seed in the lower compartment or box always at the same level. These boxes, both the upper and lower, are provided with covers; *d d d d* are the four conical cups, which are made in capacity corresponding with the quantity of seed desired to be dropped, and a machine may be provided with sets of different sizes, which can be attached and detached for different kinds of seed. These cups are attached to segmental rods working through leather in the bottom of the box and connected with double levers, *g g g*, working on a horizontal shaft, *e*, so that they are alternately raised and lowered for raising and discharging seed by the connecting or cam rods, *e e e e*, which are reciprocated by the two eccentrics, *f f*, on each end of the shaft of the main wheel, B; these connecting rods operate upon the double levers or cams, *g g g*, to which the conical cups are attached, thus raising and lowering the conical cups alternately. The drill is attached to the rear end of the frame and formed in the usual manner, except the shear of the plow, which is flatter than usual upon its surface, the intention of which is, that it shall not throw out a furrow, but allow the dirt to fall and close in behind the plow so as to cover the seed, thereby dispensing with the necessity of any scrapers or shovels for re-filling the drill or furrow. The plow is also on its under side slightly concave, so as to prevent the dirt in the furrow from closing up the holes or seed tube, and thus preventing the free discharge of seeds into the furrow.

These machines have met a very rapid sale and are spoken of as possessing great advantages. The contrivance we think good. More information about rights, &c., may be obtained by addressing Messrs. Bright and Bierce, Circleville, Ohio.

LITERARY NOTICES.

THE COTTAGE BEE KEEPER.—This is a capital little work published by C. M. Saxton, the enterprising agricultural book publisher, this city. It contains suggestions for the practical management of amateur cottage and farm apiaries on scientific principles. It has an appendix of the most instructive and entertaining notes, in relation to the busy bee that we have ever read. The author of it is an English Curate, and he writes in a style as entertaining as that of the Arabian Nights entertainments, blending instruction with great grace in composition.

ICONOGRAPHIC ENCYCOPEDIA.—Number 23 of this fine work has just been published by its enterprising publisher Rudolphe Garrigue, this city. There are only two more numbers of this work to be issued, and when completed it will make one of the most useful works ever published in our country, and it will be as useful as beautiful. We believe it has attained to a deservedly large circulation.

We are indebted to Messrs. Adriance, Sherman & Co., for a fine picture of Catharine Hayes—the charming bird of song, who arrived in the "Paclfic" last Sunday.

Lewis Arundel, or the Railroad of Life; by Frank Fairlegh. This is a most brilliant, startling and graphic production, and stamps its author as a man of genius. H. Long & Bro., Publishers, N. Y. Price 50 cts.

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